# DRAFT SHORELINES EXPERTISE REPORT

Submitted to: Washington State Department of Transportation 401 Second Avenue, Suite 300 Seattle, WA 98104-2887

> Prepared by: David Evans and Associates, Inc. 415 - 118th Avenue SE Bellevue, WA 98005-3518

> > **Revised August 2001**

# I-405 CORRIDOR PROGRAM **Draft Shorelines Expertise Report**

# TABLE OF CONTENTS

| SU | MMARY  |  | S-1               |
|----|--|--|-------------------|
| 1. | INTRODU  | CTION  | 1-1               |
|    | 1.1 Report                                     | Organization and Scope   | 1-1               |
|    | 1.2 Overvi                                     | ew of I-405 Corridor Program   | 1-1               |
|    | 1.3 Need I<br>1.3.1<br>1.3.2<br>1.3.3<br>1.3.4 | For the Proposed Action Growth in Travel Demand Traffic Congestion and Reliability Freight Mobility Safety | 1-2<br>1-6<br>1-9 |
|    | 1.4 Purpos                                     | se of the Proposed Action  | 1-10              |
|    | 1.5 Study                                      | Area   | 1-11              |
| 2. | DESCRIP  | TION OF ALTERNATIVES   | 2-1               |
|    | 2.1 No Ac                                      | ion Alternative  | 2-3               |
|    | 2.2 Alterna                                    | ative 1: High-Capacity Transit/TDM Emphasis  | 2-4               |
|    | 2.3 Alterna                                    | ative 2: Mixed Mode with High-Capacity Transit/Transit Emphasis  | 2-7               |
|    | 2.4 Alterna                                    | ative 3: Mixed Mode Emphasis   | 2-8               |
|    | 2.5 Alterna                                    | ative 4: General Capacity Emphasis   | 2-8               |
| 3. | METHOD   | DLOGY AND COORDINATION   | 3-1               |
|    | 3.1 Evalua                                     | tion Criteria  | 3-1               |
|    | 3.2 Appro                                      | ach to Analyses  | 3-1               |
|    | 3.3 Coord                                      | nation with Agencies and Jurisdictions   | 3-2               |
|    | 3.4 Plans,                                     | Policies, and Approvals  | 3-2               |
| 4. | AFFECTE  | D ENVIRONMENT  | 4-1               |
|    | 4.1 Shore                                      | ines in the Study Area   | 4-1               |
| 5. | IMPACT A                                       | NALYSIS  | 5-1               |
|    | 5.1 No Ac                                      | ion Alternative  | 5-1               |

|    | 5.1.      | l Cons     | struction Impacts  | 5-1  |
|----|-----------|------------|--|------|
|    | 5.1.2     |            | rational Impacts   |      |
|    | 5.2 Alte  | rnative 1: | : High-Capacity Transit/Transportation Demand Management | 5-7  |
|    | 5.2.      | l Cons     | struction Impacts  | 5-7  |
|    | 5.2.2     | 2 Oper     | rational Impacts   | 5-7  |
|    | 5.3 Alte  | rnative 2: | : Mixed Mode with High-Capacity Transit/Transit Emphasis | 5-15 |
|    | 5.3.      | l Cons     | struction Impacts  | 5-15 |
|    | 5.3.2     | 2 Oper     | rational Impacts   | 5-15 |
|    | 5.4 Alte  | rnative 3: | : Mixed Mode   | 5-25 |
|    | 5.4.      | I Cons     | struction Impacts  | 5-25 |
|    | 5.4.2     | 2 Oper     | rational Impacts   | 5-25 |
|    | 5.5 Alte  | rnative 4: | : General Capacity Emphasis                              | 5-35 |
|    | 5.5.      | l Cons     | struction Impacts  | 5-35 |
|    | 5.5.2     | 2 Oper     | rational Impacts   | 5-35 |
|    | 5.6 Sec   | ondary In  | npacts   | 5-45 |
|    | 5.7 Mitig | gation Me  | easures  | 5-45 |
| 6. | COMPA     | RISON (    | OF ALTERNATIVES  | 6-1  |
| 7. | REFER     | ENCES      |  | 7-1  |
| ጸ  | GLOSS     | ΔRY        |  | 8-1  |

# **APPENDICES**

- A. Major Elements of AlternativesB. Alternatives Project Matrix
- C. Communication and Coordination
- D. Individual Jurisdiction's Shoreline Designation Maps

# LIST OF TABLES

| Table S.1: Summary of Potential Impacts to Shorelines in the Study Area                  | S-2  |
|--|------|
| Table S.2: Summary of Projects Subject to SMA Regulatory Requirements in the Study Area. | S-3  |
| Table 1.1: Comparison of Typical I-405 Study Area P.M. Peak Hour Travel Times by Mode    | 1-8  |
| Table 2.1: System Elements Contained in Each Alternative                                 | 2-2  |
| Table 2.1: (continued) System Elements Contained in Each Alternative                     | 2-3  |
| Table 4.1: Shorelines within the Study Area  | 4-1  |
| Table 5.1: Shorelines Potentially Impacted by the No Action Alternative                  | 5-3  |
| Table 5.2: Shorelines Potentially Impacted by Alternative 1                              | 5-9  |
| Table 5.3: Shorelines Potentially Impacted by Alternative 2                              | 5-17 |
| Table 5.4: Shorelines Potentially Impacted by Alternative 3                              | 5-27 |
| Table 5.5: Shorelines Potentially Impacted by Alternative 4                              | 5-37 |
|  |      |
| LIST OF FIGURES  |      |
| Figure 1.1: Study Area   | 1-3  |
| Figure 1.2: Daily Traffic Volumes at Selected Locations on I-405                         | 1-5  |
| Figure 1.3: Hours of Traffic Congestion on I-405   | 1-7  |
| Figure 2.1: No Action Alternative  | 2-5  |
| Figure 2.2: Alternative 1 - HCT/TDM Emphasis   | 2-9  |
| Figure 2.3: Alternative 2 - Mixed Mode Emphasis with HCT/TDM Emphasis                    | 2-11 |
| Figure 2.4: Alternative 3 - Mixed Mode Emphasis  | 2-13 |
| Figure 2.5: Alternative 4 - General Capacity Emphasis                                    | 2-17 |
| Figure 5.1: No Action Alternative Projects with Jurisdictional Shorelines                | 5-5  |
| Figure 5.2: Alternative 1 Projects with Jurisdictional Shorelines                        | 5-13 |
| Figure 5.3: Alternative 2 Projects with Jurisdictional Shorelines                        | 5-23 |
| Figure 5.4: Alternative 3 Projects with Jurisdictional Shorelines                        | 5-33 |
| Figure 5.5. Alternative 4 Projects with Jurisdictional Shorelines                        | 5-43 |



# **Draft Shorelines Expertise Report**

#### **SUMMARY**

This expertise report is an assessment of the potential impacts of four proposed action alternatives and a No Action Alternative for the I-405 Improvements Project on jurisdictional shorelines. The analysis is conducted at a programmatic level to contribute to the decision making process for the project. Ecological functions of shorelines are not evaluated in this report; they are discussed in the I-405 Corridor Program Draft Expertise Reports on Wetlands (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), and Surface Water Resources (CH2M HILL, 2001).

Within the study area there are 24 jurisdictional shorelines. Each of the alternatives, including the No Action Alternative, cross at least one jurisdictional shoreline, and in one alternative, 12 jurisdictional shorelines are either entered or crossed. Many impacts to shorelines can result from the construction of the project and from operation and maintenance. Typically the project has the potential to fill in shorelines that will result in substantial adverse environmental impacts to vegetation, flood storage capacity, and fish and wildlife habitat. Increased sediment loads, raised water temperatures, additional surface water runoff, intensive downstream scouring and loss of food sources all can result from filling the shoreline environment and creating additional impervious surfaces. All of these impacts are addressed in the I-405 Corridor Program Draft Floodplain, Wetlands, and Fish and Aquatic Habitat Expertise Reports (DEA, 2001). This report will concentrate on the impact that has not been addressed in the other reports: temporary or permanent loss to public access.

Through proper assessment of these impacts, projects can be designed to avoid the most substantial impacts to the shoreline environment. Using conventional engineering techniques to minimize impacts selected mitigation measures can be employed to compensate for the immediate loss of functions and in some circumstances may even improve the functions that have been lost through previous construction activity. Through the careful planning and evaluation of each alternative, projects could be constructed and operated to avoid the most direct substantial adverse environmental impacts, Mitigation measures can be employed to minimize or replace the lost functions resulting from the indirect, or secondary impacts to jurisdictional shorelines in the study area. Table S.1 provides a summary of the potential impacts for each of the alternatives. For each alternative, Table S.2 shows the specific projects that may result in substantial adverse environmental impacts.

Table S.1: Summary of Potential Impacts to Shorelines in the Study Area

| Alternative              | Shorelines Affected              | Shoreline Impacts   |
|--------------------------|----------------------------------|---|
| No Action<br>Alternative | 12 projects affect 5 shorelines  | Impacts due to loss of habitat and flood capacity are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat and I-405 Corridor Program Draft Floodplain Expertise Reports (DEA, 2001) respectively. It is anticipated that there will be no substantial shoreline impacts after incorporation of avoidance measures, design enhancements, or mitigation. |
| 1                        | 25 projects affect 10 shorelines | Impacts due to loss of habitat and flood capacity are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat and I-405 Corridor Program Draft Floodplain Expertise Reports (DEA, 2001) respectively. It is anticipated that there will be no substantial shoreline impacts after incorporation of avoidance measures, design enhancements, or mitigation. |
| 2                        | 35 projects affect 10 shorelines | Impacts due to loss of habitat and flood capacity are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat and I-405 Corridor Program Draft Floodplain Expertise Reports (DEA, 2001) respectively. It is anticipated that there will be no substantial shoreline impacts after incorporation of avoidance measures, design enhancements, or mitigation. |
| 3                        | 55 projects affect 11 shorelines | Impacts due to loss of habitat and flood capacity are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat and I-405 Corridor Program Draft Floodplain Expertise Reports (DEA, 2001) respectively. It is anticipated that there will be no substantial shoreline impacts after incorporation of avoidance measures, design enhancements, or mitigation. |
| 4                        | 56 projects affect 11 shorelines | Impacts due to loss of habitat and flood capacity are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat and I-405 Corridor Program Draft Floodplain Expertise Reports (DEA, 2001) respectively. It is anticipated that there will be no substantial shoreline impacts after incorporation of avoidance measures, design enhancements, or mitigation. |

Table S.2: Summary of Projects Subject to SMA Regulatory Requirements in the Study Area

|                     |  | Alternative #1   | Alternative #2  | Alternative #3   | Alternative #4  |
|---------------------|--|--|---|--|---|
| Jurisdiction        | No Action<br>Alternative                 | High-Capacity<br>Transit/TDM<br>Emphasis   | Transit<br>Emphasis   | Mixed Mode<br>Emphasis   | General Capacity<br>Emphasis  |
| King County         | R-47                                     | R.Bl.5 & T.HCT-<br>8   | R.BI.5; T.HCT-8;<br>R.PA-10   | R.Bl.5; R.TC-7;<br>R.AC-3; R.AC-16;<br>R.CD-5; T.HCT-8;<br>R.PA-10;  | R.BI-5; R.AC-16;<br>R.PA-10; R.PA-11;<br>R.PA-24 & R.HOV-53   |
| Snohomish<br>County |  |  |   | R.TC-8   | R.TC-27   |
| Tukwila             |  | NM.P&B-19 &<br>T.HCT-1   | R.TC-9; R.IC-3;<br>R.AC-36; T.HCT-<br>1; NM.P&B-19  | R.TC-1; R.IC-3;<br>R.HOV-25; T.HCT-1;<br>NM.P&B19  | R.TC-9; R.TC-20;<br>R.TC-29; R.AC-35;<br>R.AC-36; R.IC-3;<br>R.HOV-25 &<br>NM.P&B-19  |
| Woodinville         | R.HOV.58; HOV-<br>102; R.PA.1 & R-<br>51 |  | R.CF.5  | R.AC-16; R.CA-17;<br>R.AC-30; R.PA-25;<br>R.PA-28; R.CF-5;<br>R.PA-25; R.PA-26 &<br>R.PA-28  | R.CF-5; R.AC-16;<br>R.AC-17; R.AC-18;<br>R.PA-28; R.PA-25 &<br>R.PA-26  |
| Renton              | R-36 & R-55                              | R.Bl.1; R.Bl.7;<br>R.Bl.14; R.HOV-<br>43; R.IC-4;<br>R.HOV-44;<br>NM.P&B-14<br>NM.P&B-15<br>T.HCT-1 &<br>T.HCT-2 | R.Bl.1; R.Bl.7;<br>R.Bl.14; R.TC-9;<br>R.IC-4; R.HOV-<br>43; R.HOV-44;<br>T.HCT-1; T.HCT-<br>2; NM.P&B-14<br>NM.P&B-15 &<br>NM.P&B-16 | R.Bl.1; R.Bl.7;<br>R.Bl.14; R.TC- 1;<br>R.TC-2; R.TC-3;<br>R.AC-3; R.IC-4;<br>R.CD-1; R.HOV-43;<br>R.HOV-49; T.HCT-1;<br>T.HCT-2; T.HCT-3;<br>NM.P&B-15 &<br>NM.P&B-16 | R.Bl.1; R.Bl.7;<br>R.Bl.14; R.TC-20;<br>T.TC-21; R.TC-9;<br>R.TC-10; R.TC-11;<br>R.TC-22; R.TC-29;<br>R.AC-3; R.IC-4;<br>RCD-1 & R.PA-24                                    |
| Bellevue            |  | R.Bl.8; T.HCT-4;<br>T.HCT-6  | R.HOV-27;<br>R.HOV-56 &<br>R.HOV-60   | R.CD-2; R.HOV-27;<br>R.HOV-56; R.HOV-<br>60 & T.HCT-4  | R.CD-2 & R.HOV-27   |
| Kirkland            |  | T.HCT-8  | R.HOV-56 &<br>T.HCT-8   | R.TC-7; R.HOV-56 & T.HCT-8   |   |
| Redmond             | R-25; R-26 & R-<br>28                    | T.HCT-6;<br>R.HOV-47 &<br>R.HOV-55   | R.PA-27;<br>R.HOV-47;<br>R.HOV-55&<br>R.PA-18   | R.PA-17 & R.PA-18  | R.AC-15; R.PA-17;<br>R.PA-18 & R.PA-27  |
| Kenmore             |  | R.HOV-53 &<br>R.PA.11;   | R.HOV53 &<br>R.PA-11  | R.HOV-53 & R.PA-11   | R.PA-11 & R.HOV-53  |
| Bothell             | R.HOV-62 &<br>R.HOV-63                   | R.BI.5; R.BI.6;<br>T.HCT-9;<br>NM.CR-4;<br>NM.CR-7 &<br>NM.P&B-5   | R.PA-3;R.BI.5;<br>R.BI.6; NM.CR-<br>2; NM.CR-7;<br>NM.P&B-5<br>R.CF.5; R.IC-11;<br>R.HOV-29 &<br>R.HOV-41                             | R.Bl.5; R.Bl.6; R.CF-<br>5; R.TC-7; R.TC8;<br>R.IC-11; R.IC-21;<br>R.CD-5; R.HOV-29;<br>R.HOV-41; T.HCT-9;<br>NM.CR-2; NM.CR-7;<br>NM.P&B-5 R.PA-2 &<br>R.PA-27        | R.Bl.5; R.Bl.6; R.TC-<br>15; R.TC-16; R.TC-<br>26; R.TC-27; R.CF-5;<br>R.AC-20; R.AC-30;<br>R.PA-25; R.IC-11;<br>R.IC-21; R.CD-5;<br>R.HOV-29; NM.CR-2;<br>NM.CR-7 & R.PA-3 |

#### INTRODUCTION

## 1.1 Report Organization and Scope

This report presents an evaluation of the potential impacts of five alternative approaches to traffic and transportation-related improvements in the Interstate 405 (I-405) corridor on farmlands.

## 1.2 Overview of I-405 Corridor Program

Construction of the 30-mile Interstate 405 (I-405) freeway in the early 1960s as a bypass around Seattle for Interstate 5 (I-5) traffic also opened the rural, agricultural countryside east of Lake Washington to commercial and residential development. Interstate 405 currently ranges from six to ten lanes along the 30-mile corridor, and it is the designated military route through Seattle, as Interstate 5 was deemed too constricted (see Figure 1.1). Construction of the Evergreen Point (SR 520) floating bridge in 1963 further set the stage for rapid and substantial changes on the Eastside.

Today, I-405 has changed dramatically from a Seattle bypass to become the region's dominant north-south travel corridor east of I-5. More than two-thirds of the total trips on I-405 begin and end in the corridor itself. The remaining third have strong ties with the communities along SR 167 to the south of the study area, and with developing areas to the east within the urban growth area of King County. However, as the regional importance of the I-405 corridor has grown, it has become increasingly evident that worsening traffic congestion within the corridor has the potential to create serious adverse effects on personal and freight mobility, the environment, the state and regional economy, and the quality of life.

In response to these and other concerns, the Washington State Department of Transportation (WSDOT) has joined with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Central Puget Sound Regional Transit Authority (Sound Transit), King County, and local governments to develop strategies to reduce traffic congestion and improve mobility in the I-405 corridor from Tukwila in the south to Lynnwood in the north.

The I-405 Corridor Program is a cooperative effort involving over 30 agencies that have responsibilities for planning, regulating, and implementing transportation improvements in the 250+ square-mile corridor. The decision to be made through the combined National Environmental Policy Act/State Environmental Policy Act EIS policy is to identify the best mix of modal solutions, transportation investments, and demand management to improve movement of people and goods throughout the I-405 corridor, reduce foreseeable traffic congestion, and satisfy the overall program purpose and need.

The programmatic I-405 Corridor Program EIS focuses on broad corridor-wide issues related to travel mode and transportation system performance. This is consistent with the program objective to enable program decisions focusing on mode choice, corridor selection, general location of improvements, and how combinations of improvements may function together as a system to solve corridor-wide transportation problems. A programmatic level of analysis is appropriate and necessary at this early stage in the decision-making process, when many project-level design details would not be meaningful in evaluating effects on mobility and environmental quality across such a large area. Subsequent environmental analysis, documentation, and review will be prepared to enable decisions regarding site-specific, project-level details on alignments, high-capacity transit technology, project impacts, costs, and mitigation measures after a preferred alternative has been identified.

## 1.3 Need For the Proposed Action

The need identified for the I-405 Corridor Program is:

To improve personal and freight mobility and reduce foreseeable traffic congestion in the corridor that encompasses the I-405 study area from Tukwila to Lynnwood in a manner that is safe, reliable, and cost-effective.

The following sub-sections expand upon the issues and trends that influence the need for the proposed action, particularly with respect to travel demand and traffic congestion, and the attendant effects on freight mobility and safety.

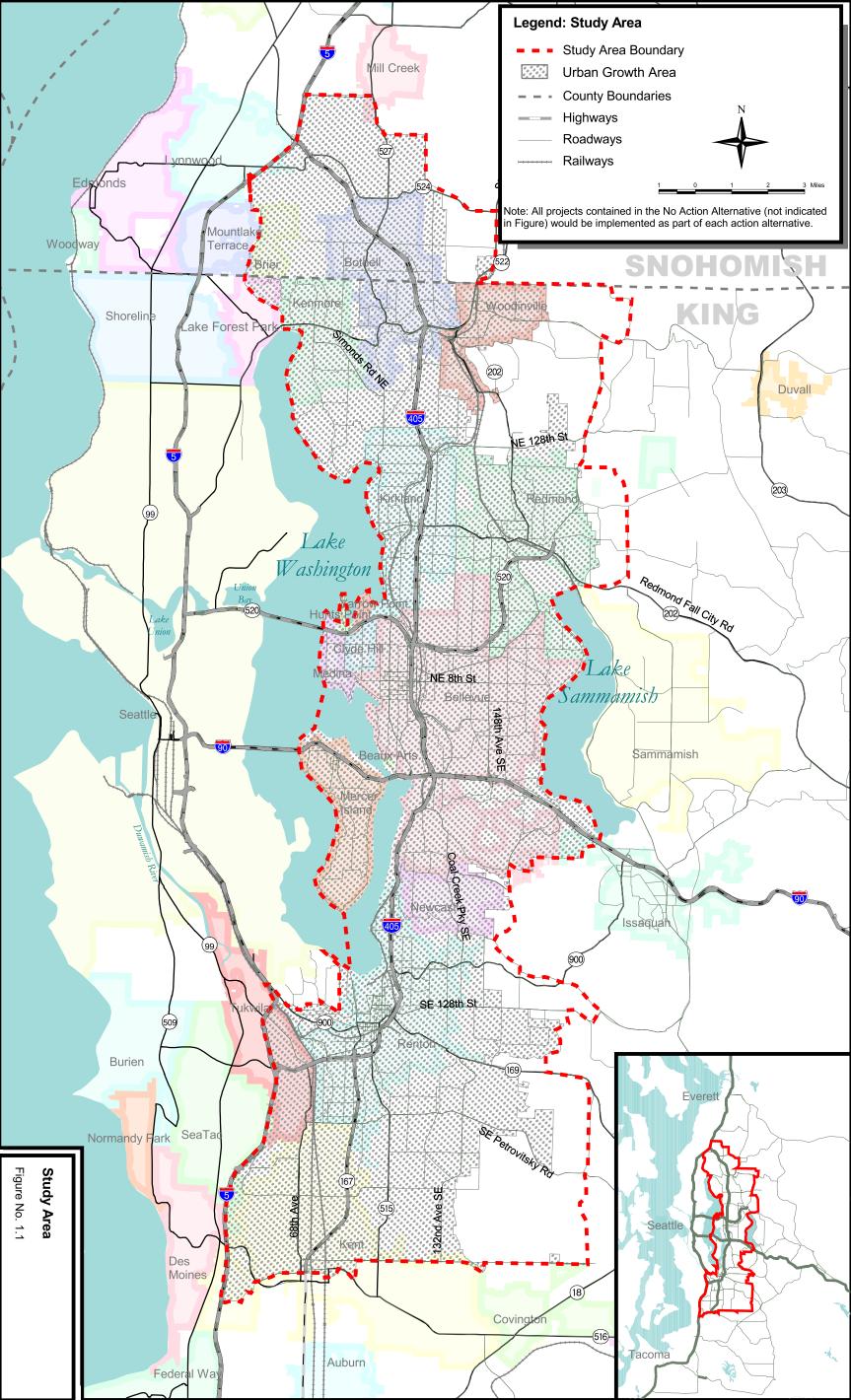
#### 1.3.1 Growth in Travel Demand

Between 1970 and 1990, communities in the I-405 corridor grew much faster than the central Puget Sound region as a whole. During the 20-year period, employment in the study area increased over 240 percent from 94,500 to 323,175 and population grew nearly 80 percent from 285,800 to 508,560.

Population and employment continued to grow during the 1990s; in particular, employment grew at an annual rate of almost 3.5 percent. Looking ahead, growth in the corridor through 2020 likely would keep pace with the robust rate of growth in the Puget Sound region. The I-405 corridor population and employment is forecast to increase by more than 35 percent. This means that by 2020 an additional 144,000 people are expected to be employed within the study area, while the population is expected to reach approximately 765,000, an increase of more than 200,000 people from 1997.

#### 1.3.1.1 Travel Demand

Travel demand trends in the I-405 corridor match these population and employment trends: between 1995 and 2020, person trips are generally expected to increase more than 50 percent. Travel demand in terms of traffic volume is heaviest within the study area on I-405 itself, with the freeway carrying 60 to 70 percent of the total daily traffic volumes passing though the study area in the north-south direction. Conversely, the arterial streets carried 30 to 40 percent. In the east-west direction, the arterial street system plays an important role, with volumes almost equally distributed between the arterial streets and the two east-west freeways, I-90 and SR 520. In 1999, the highest volumes on I-405 occurred in the vicinity of NE 8th Street in Bellevue: about 210,000 vehicles per day. I-405 at SR 900 in Renton typified traffic volumes on I-405 south of I-90, carrying about 138,000 vehicles per day.



WSDOT's most recent traffic count data (1999) show the lowest I-405 traffic volumes, 95,000 vehicles per day, in the north end between SR 522 and I-5 at Swamp Creek, and the highest, 210,000 vehicles per day, between I-90 and SR 520. The section south of Kirkland to SR 520 carries 185,000 to 195,000 vehicles per day, and the section south of I-90 typically carries 150,000 vehicles per day. Figure 1.2 shows these findings. This variation in traffic volumes is the result of different travel demands within the corridor as well as the available capacity on the freeway.

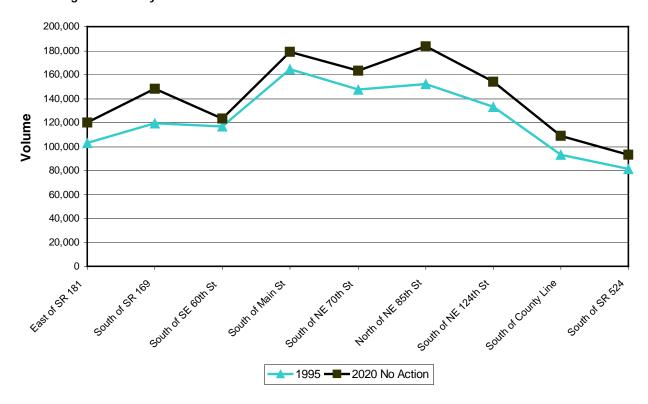


Figure 1.2: Daily Traffic Volumes at Selected Locations on I-405

Source: PSRC Model

#### 1.3.1.2 Mode Split

Single-occupant vehicles (SOVs) generate the majority of traffic demand: up to 78 percent of work trips within the I-405 study area are SOVs. High-occupancy vehicles (HOVs) and transit users comprise around 20 percent of all work trips within the study area. SOV use in the study area is higher than the average for King County, while HOV and walk/bike percentages are lower. These results reflect the more suburban character of the I-405 study area.

The segment of I-405 with the highest peak-period transit ridership is between SR 520 and the Totem Lake area (2,100 riders). Transit ridership near each of the northern and southern termini of I-405 is less than 1,000 riders during peak periods. To encourage more transit demand, Sound Transit's Regional Express program is currently in the planning and early design stages of new park-and-ride lots, transit centers, and direct access ramps, including

large-scale improvements to several I-405 interchanges. King County Metro and Sound Transit's evolving bus transit services concept for the I-405 study area would serve multiple activity centers, instead of the traditional Seattle/Bellevue hub-and-spoke design.

#### 1.3.1.3 Trip Characteristics

Travel demand on I-405 appears greater for longer trips; along several sections of I-405, the average vehicle trip length exceeds 25 miles, roughly three times the study area average. Forecasts for 2020 show the freeway attracting even more long trips, with over 50 percent of all trips on I-405 exceeding 30 miles in length.

Today in the study area, only 20 percent of the total daily person-trips are home-based work trips, that is, commute trips directly to and from work. Thirty-nine percent of daily person-trips are other home-based trips (e.g., shopping, recreational, personal business) and 28 percent are non-home-based trips (e.g., traveling from work to daycare or shopping). School (2 percent) and commercial vehicle trips (11 percent) make up the rest. The relative shares of each trip purpose are expected to be similar in 2020. The fairly small share of trips that are purely to and from work reflects the fact that people are increasingly linking their trips, stopping on the way home to shop, pick up children, etc. (which are considered non-home based trips). This poses a challenge for transit and carpool/vanpool use.

#### 1.3.2 Traffic Congestion and Reliability

#### 1.3.2.1 Traffic Congestion

Heavy travel demand and frequent traffic incidents contribute to substantial traffic congestion on I-405, although they are not the only causes. Traffic congestion along I-405 is widespread during the morning and afternoon peak periods and has spread to surrounding time periods. A useful way to examine daily congestion is to look at the number of hours during which a facility is congested. For purposes of this analysis, "congestion" on the freeway is defined as travel speeds below 45 mph. Figure 1.3 illustrates the severity of traffic congestion that was present in 1997 at twelve points along I-405. The duration of traffic congestion in the northbound and southbound directions is roughly the same. The most congested area of I-405 is from I-5 in Tukwila to NE Park Drive in the city of Renton. Traffic congestion for 10-12 hours per day is typical in this section. For most other sections, traffic congestion lasts 2 to 7 hours per day.

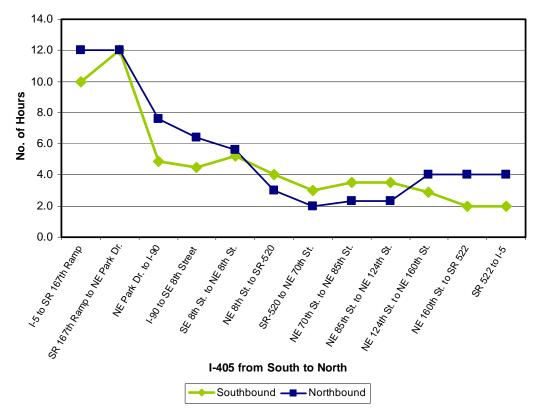


Figure 1.3: Hours of Traffic Congestion on I-405

Source: PSRC Model, Mirai Associates

The average daily "volume per freeway lane" is quite consistent throughout the corridor, which demonstrates that traffic volumes alone do not cause congestion. The most likely reason for the high hours of congestion in the south end of I-405 relates to freeway "friction" caused by curves (e.g., the "S-Curves"), grades (e.g., Kennydale Hill), and complex interchanges at I-5 and SR 167.

Traffic congestion on I-405 often results in blockage of mainline flows throughout the day by vehicles that cannot get onto the ramps at such locations as SR 167, I-90, SR 520, and SR 522. The spill-over traffic from the ramps has created substantial mainline traffic congestion and operational hazards throughout the I-405 corridor. This congestion also causes traffic to back up onto local arterials.

#### 1.3.2.2 Travel Time

Variation in congestion causes travel times to vary widely within the I-405 study area, depending upon the origin and destination of the trip and the mode of travel being used. Table 1.1 summarizes typical P.M. peak-hour travel times (1995 data) for a variety of study area trips, averaging 23 miles in length. The times are for door-to-door travel, including invehicle time and access to the trip's origin and destination. The fastest trips are typically by non-transit HOV mode, particularly for longer trips along I-405 that can take full advantage of the HOV lane system. Traveling along the full length of I-405 during the peak period can

take longer than one hour for general traffic. Transit travel times are often at least twice as long as driving the equivalent distance, especially for people walking to the transit stops. Transit travel times are 10 to 15 percent faster for park-and-ride access trips compared with walk access transit trips. This is partially due to shorter wait times at park-and-ride locations created by more frequent transit service.

Table 1.1: Comparison of Typical I-405 Study Area P.M. Peak Hour Travel Times by Mode

| Trip   | Distance<br>(miles) | General Traffic<br>Travel Time (min) | HOV Travel<br>Time (min) | Transit Travel Time<br>Walk Access (min) | Transit Travel Time<br>Park-and-Ride Access<br>(min) |
|--|---------------------|--------------------------------------|--------------------------|--|--|
| Bellevue Central Business<br>District (CBD) to Federal<br>Way/Kent | 25                  | 56                                   | 40                       | 95                                       | 83   |
| Renton to Mill Creek   | 33                  | 65                                   | 49                       | 125                                      | 105  |
| Bellevue CBD to<br>Edmonds/Lynnwood                                | 19                  | 42                                   | 38                       | 85                                       | 76   |
| Tukwila/SeaTac to<br>Redmond/Overlake                              | 23                  | 49                                   | 39                       | 116                                      | 103  |
| Issaquah/Cougar Mt. to<br>Bothell/Kenmore                          | 23                  | 46                                   | 39                       | 108                                      | 98   |
| Issaquah/Cougar Mt. to<br>Federal Way/Kent                         | 23                  | 56                                   | 47                       | 132                                      | 118  |

Source: Puget Sound Regional Council (PSRC) Model - 1995 base year

#### 1.3.2.3 Travel Time Reliability

Not only do travel times vary by segment within the I-405 study area, they are unpredictable from day to day. The reliability of travel times can be defined in terms of deviation from a mean travel time when travelers in the same transportation mode repeat their trips with identical travel routes starting at a same time of day. A transportation system provides a good level of service when travelers experience the same travel time every time or with little deviation.

The Washington State Transportation Center (TRAC) conducted research to measure the performance of the freeway system in the Central Puget Sound area, which includes the travel time reliability measure for general traffic along I-405. The most recent analysis results are described in the report entitled Central Puget Sound Freeway Network Usage and Performance, 1999 Update, Volume 1 (Washington State Transportation Center and Washington State Department of Transportation). The following summarizes the findings of the travel time reliability data prepared by the TRAC for 1999.

- > Existing travel time reliability for the vehicles traveling *from Tukwila to Bellevue CBD* is very poor during the mid-day and evening periods and extremely poor during the morning peak period.
- Existing travel time reliability for the vehicles traveling *from Bellevue CBD to Tukwila* is poor throughout the day (from 6:00 A.M. to 6:30 P.M.). In particular, the travel time reliability during the afternoon peak period is very poor and the traffic flows in the period are highly unstable.

- > Existing travel time reliability for the trips *from Bellevue CBD to SR 522* is relatively poor during the P.M. peak period. Travelers starting trips during other periods have experienced good travel time reliability.
- > Existing travel time reliability problems for the trips *from SR 522 to Bellevue CBD* are confined to the A.M. peak period. The problem is worst at 8 A.M.

Traffic incidents along the freeway corridor are major causes of the reliability problems. The State's Incident Management Program was implemented to help improve overall travel time reliability within the I-405 Corridor. Reliability of travel in the HOV lanes is considerably better than in the general purpose lanes. HOV travel times typically operate from 15-20 miles per hour faster than the adjacent general purpose lanes during congested time periods. HOV travel time reliability suffers when there is a major incident along I-405 with stop-and-go conditions. In these situations, HOV speeds drop and the level of HOV lane violations tends to increase.

#### 1.3.3 Freight Mobility

The decreasing reliability of the regional transportation system, including I-405, is creating a serious problem for regional freight mobility. The central Puget Sound region serves as an important freight gateway to Pacific Rim countries. Automobiles, forest and agricultural products, communications and computer equipment, and hundreds of other items continuously move over the region's roadways and railroads, to seaports and airports. Substantial delay as a result of transportation system congestion is costing the region's businesses nearly \$700 million a year, according to information from WSDOT. The cost to the freight industry itself is estimated to be around \$200 million per year.

Products shipped by truck across I-90 from Eastern Washington reach points north and south of Seattle via I-405. At the same time, I-405 serves as a heavily used transport corridor for local freight delivery to and from the cities along the corridor. Smaller trucks, such as delivery vans, account for many freight trips within the region, and these trips could benefit greatly from roadway improvements to I-405.

Interstate 405 continues to be used by freight carriers as an alternative to the preferred I-5 route when severe congestion occurs on I-5 in downtown Seattle near the Convention Center (one of the most substantial freight mobility bottlenecks in the region). I-405 also provides ready access to the distribution centers along SR 167 in the Kent Valley. Volumes of heavy trucks on the portion of I-405 south of I-90 are about double those along the northern portion due to truck movements to and from the Kent Valley. Truckers identify congestion at the SR 167/I-405 interchange as one of the worst transportation system problems in the region, and the trucking community supports improvements to this major truck corridor interchange as one of its top priorities.

The latest data indicate that the central Puget Sound region's roadways carry approximately 1.2 million truck trips each day, with about 70 percent of those trips occurring within King County. I-405 carries a substantial portion of those trips, moving up to 90 percent of the total truck origins and destinations in east King County. Truck volumes along I-405 are expected to grow by 50 percent by the year 2010. Reductions in system reliability and resulting higher transportation costs increase the cost of manufacturing and distributing goods, while adversely affecting economic vitality and job creation. Accessibility to markets

becomes increasingly difficult with worsening traffic congestion and delay. Improvements to the I-405 corridor could provide tangible economic benefits for all of Washington State.

#### 1.3.4 Safety

Twenty-nine of the 280 high accident locations in King and Snohomish counties are located along I-405. Most high accident locations are associated with ramps connecting to I-405, including those at SR 181 (Interurban), SR 169, SR 900 (Sunset and Park), Coal Creek Parkway, SE 8th Street, NE 4th Street, NE 8th Street, SR 908 (NE 85th Street), NE 116th Street, NE 160th Street, and SR 527. The portion of I-405 north of SR 527 is identified as a high accident corridor due to the relatively higher speeds and more serious injuries associated with these accidents.

Over the three-year period from 1994 to 1996, a total of 5,580 accidents was reported along I-405. Most collisions occurred on the mainline freeway, with about one-fourth of all accidents occurring on the ramps, collector-distributor roads, and cross streets at the interchanges. About half of all collisions involve property damage only, while half involve injuries or fatalities. This injury pattern applies equally to the mainline and ramp segments; however, all seven fatalities reported in this period occurred on the I-405 mainline.

The overall accident rate along I-405 (1.6 accidents per million vehicle miles) is about midrange compared to other freeways in King County. The rates are lower than the average rate for all state highways (1.88 accidents per million vehicle miles, or MVM) and for state highways in King County (2.27 accidents per MVM). On comparable local freeways, I-5 and SR 520 both exhibit accident rates of about 2.0 accidents per MVM. WSDOT's ramp metering program on I-405 has been very successful. Rear-end and sideswipe accidents have decreased by 60 percent to 70 percent near locations with ramp meters.

For state roads serving as surface arterial routes, accident rates typically fall into the range of three to five accidents per MVM. This rate is related to the presence of traffic signals, driveways, pedestrians, and bicyclists, and lower levels of access control. These accident rates are typical of urban arterial facilities. Accident rates for selected arterial and collector routes in the primary study area generally range between two and four accidents per MVM, with some streets higher. These streets also experience higher accident rates due to the presence of signalized intersections, driveways, and other conflicts.

# 1.4 Purpose of the Proposed Action

The purpose of the proposed action is:

To provide an efficient, integrated, and multi-modal system of transportation solutions within the corridor that meets the need in a manner that:

- ➤ Provides for maintenance or enhancement of livability for communities within the corridor;
- ➤ Provides for maintenance or improvement of air quality, protection or enhancement of fish-bearing streams, and regional environmental values such as continued integrity of the natural environment;

- ➤ Supports a vigorous state and regional economy by responding to existing and future travel needs; and
- ➤ Accommodates planned regional growth.

## 1.5 Study Area

The study area for the I-405 Corridor Program defines the general boundaries of the I-405 corridor and encompasses the essential improvements proposed within each alternative. It encompasses an area of approximately 250 square miles that extends on both sides of I-405 between its southern intersection with I-5 in the city of Tukwila and its northern intersection with I-5 in Snohomish County. This area includes the cities of Tukwila, Renton, Newcastle, Bellevue, Redmond, Kirkland, Woodinville, and Bothell, as well as portions of the cities of Issaquah, Kenmore, Kent, Lynnwood, and Mercer Island and adjacent unincorporated areas of King and Snohomish counties.

For purposes of environmental analysis, documentation, and review, potential substantial adverse effects are identified and evaluated wherever they are reasonably likely to occur in the region.

#### 2. DESCRIPTION OF ALTERNATIVES

Four programmatic action alternatives and a No Action Alternative are evaluated in the Environmental Impact Statement (EIS). Each of the four action alternatives is a combination of multi-modal transportation improvements and other mobility solutions packaged to work together as a system. Each package demonstrates a unique emphasis in response to the purpose and need for the I-405 Corridor Program. The improvements and mobility solutions that comprise each action alternative are assembled from the following major elements:

- > Transportation demand management (TDM)
- > Regional transportation pricing
- > Local transit service (bus and other technologies)
- > Bus rapid transit (BRT) operating in improved-access high-occupancy vehicle lanes on I-405, I-90, and SR 520
- > Fixed-guideway high-capacity transit (HCT) operating with physical separation from other transportation modes
- Arterial high-occupancy vehicle (HOV) and bus transit priority improvements
- > HOV express lanes on I-405 and HOV direct access ramps
- > Park-and-ride capacity expansions
- > Transit center capacity improvements
- > Basic I-405 safety and operational improvements
- > I-405 general purpose lanes
- > I-405 collector-distributor lanes
- > I-405 express lanes
- > SR 167 general purpose lanes
- Capacity improvements on freeways connecting to I-405
- > Planned arterial improvements
- > Capacity improvements on north-south arterials
- > Arterial connections to I-405
- > Pedestrian and bicycle improvements
- > Intelligent transportation system (ITS) improvements
- Truck freight traffic enhancements

These elements are described in greater detail in Appendix A (I-405 Corridor Program - Major Elements of Alternatives). Table 2.1 shows the system elements contained in each of the alternatives.

Table 2.1: System Elements Contained in Each Alternative

|   | No Action<br>Alternative | Alternative 1  HCT/TDM  Emphasis | Alternative 2 Mixed Mode with HCT/Transit Emphasis | Alternative 3 Mixed Mode Emphasis | Alternative 4  General Capacity Emphasis |
|---|--------------------------|----------------------------------|--|-----------------------------------|--|
| Committed and funded freeway projects                         | Х                        | Х                                | Х  | Х                                 | Х  |
| Committed and funded HOV projects                             | Х                        | Х                                | Х  | Х                                 | Х  |
| Committed and funded arterial projects                        | Х                        | Х                                | Х  | Х                                 | Х  |
| Park–and-ride expansions included in No Action                | Х                        | Х                                | Х  | Х                                 | Х  |
| Transit center improvements included in No Action             | Х                        | Х                                | Х  | Х                                 | Х  |
| Transportation Demand<br>Management (TDM)                     | Х                        | Х                                | Х  | X                                 | Х  |
| Expanded TDM regional congestion pricing strategies           |                          | Х                                |  |                                   |  |
| Expand transit service by 100% compared to K. Co. 6-year plan |                          | Х                                | Х  | X                                 |  |
| Expand transit service by 50% compared to K. Co. 6-year plan  |                          |                                  |  |                                   | Х  |
| Physically separated, fixed-<br>guideway HCT system           |                          | Х                                | Х  |                                   |  |
| Bus rapid transit operating in improved access HOV lanes      |                          |                                  |  | Х                                 |  |
| Arterial HOV priority for transit                             |                          | Х                                | Х  | X                                 |  |
| HOV direct access ramps on I-405                              |                          |                                  | Х  | Х                                 | X  |
| Additional park-and-ride capacity expansion                   |                          | X                                | Х  | Х                                 |  |
| Additional transit center improvements                        |                          | X                                | Х  | Х                                 |  |
| Basic I-405 safety and operational improvements               |                          | Х                                | Х  | Х                                 | Х  |
| I-405/ SR 167 interchange ramps for all major movements       |                          |                                  | Х  | Х                                 | Х  |
| One added general purpose lane in each direction on I-405     |                          |                                  | Х  |                                   | Х  |
| Two added general purpose lanes in each direction on I-405    |                          |                                  |  | Х                                 |  |

Table 2.1: (continued) System Elements Contained in Each Alternative

|  | No Action<br>Alternative | Alternative 1  HCT/TDM  Emphasis | Alternative 2<br>Mixed Mode with<br>HCT/Transit<br>Emphasis | Alternative 3 Mixed Mode Emphasis | Alternative 4  General Capacity Emphasis |
|--|--------------------------|----------------------------------|---|-----------------------------------|--|
| Two express lanes added in each direction on I-405 <sup>a</sup>            |                          |                                  |   |                                   | Х  |
| Widen SR 167 by one lane each direction to study area boundary             |                          |                                  | Х   | Х                                 | Х  |
| Improved capacity of freeways connecting to I-405                          |                          |                                  | Х   | Х                                 | Х  |
| Planned arterial improvements  |                          |                                  | Х   | Х                                 | Х  |
| Complete missing segments of major arterial connecting routes <sup>b</sup> |                          |                                  |   | Х                                 |  |
| Expand capacity on north-south arterials <sup>b</sup>                      |                          |                                  |   |                                   | X  |
| Upgrade arterial connections to I-405 <sup>b</sup>                         |                          |                                  | Х   | Х                                 | Х  |
| Pedestrian / bicycle connections and crossings of I-405                    |                          | Х                                | Х   | Х                                 | Х  |
| Intelligent transportation system (ITS) improvements                       |                          | Х                                | Х   | Х                                 | Х  |
| Truck freight traffic enhancements   |                          | Х                                | Х   | Х                                 |  |

<sup>&</sup>lt;sup>a</sup> To be studied as general purpose lanes and as managed high-occupancy/toll (HOT) lanes.

#### 2.1 No Action Alternative

The No Action Alternative includes the funded highway and transit capital improvement projects of cities, counties, Sound Transit, and WSDOT. These projects are already in the pipeline for implementation within the next six years, and are assumed to occur regardless of the outcome of the I-405 Corridor Program. For this reason, they are referred to collectively as the No Action Alternative.

Under the No Action Alternative, only limited expansion of state highways would occur. No expansion of I-405 is included; however, a new southbound I-405 to southbound SR 167 ramp modification would be constructed. Approximately 15 arterial widening and interchange improvement projects would be implemented within the study area by local agencies. Short-term minor construction necessary for continued operation of the existing transportation facilities would be accomplished, and minor safety improvements would be constructed as required.

It is assumed that Phase I of Sound Transit's regional transit plan would be completed. Approximately 36 HOV direct access projects, arterial HOV improvements, park-and-ride expansions, and transit center enhancements would be implemented in the study area as part

b With jurisdictional approval.

of the No Action Alternative. Bus transit service levels by the 2020 horizon year are based upon the Puget Sound Regional Council (PSRC) Metropolitan Transportation Plan. A 20 percent increase in bus transit service hours above the current King County 6-year plan level is assumed by year 2020. Parking costs are expected to increase due to market forces. Additional urban centers and major employment centers within the study area are also assumed to implement parking charges by 2020.

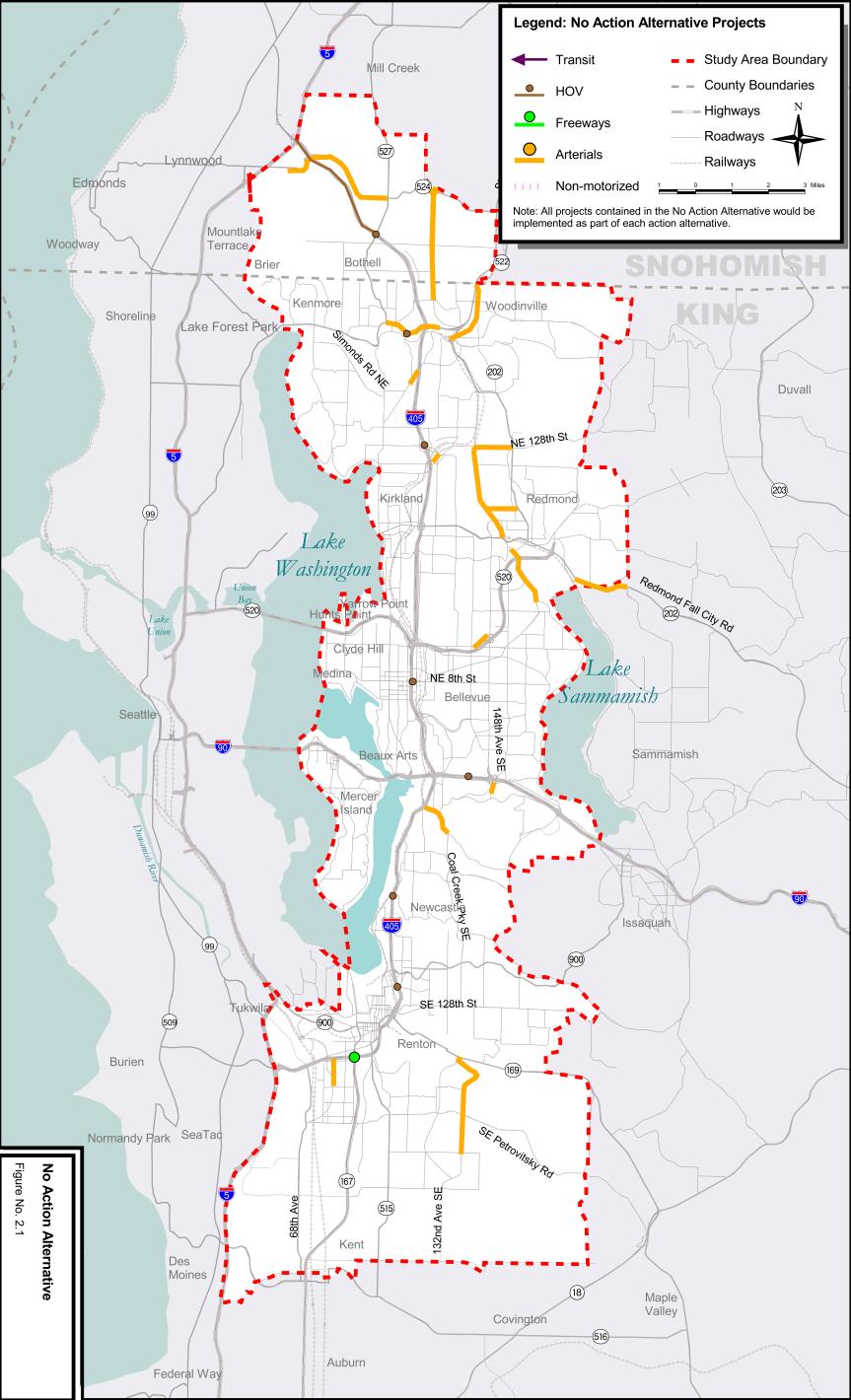
These baseline transportation improvement projects are, or will be, the subject of separate and independent project-specific environmental analysis, documentation, and review. Their direct impacts are not specifically evaluated by the I-405 Corridor Program. However, the secondary and cumulative impacts of these projects are, addressed as part of the analyses contained herein.

Figure 2.1 shows the locations of the improvements contained in the No Action Alternative. Appendix B (Alternatives Project Matrix) identifies the specific transportation improvements and mobility solutions contained within each system element and alternative.

# 2.2 Alternative 1: High-Capacity Transit/TDM Emphasis

This alternative attempts to minimize addition of new impervious surface from general purpose transportation improvements and to encourage transit use within the study area. To do this, Alternative 1 emphasizes reliance on a new physically separated fixed-guideway HCT system, substantial expansion of local bus transit service, non-construction mobility solutions such as regional transportation pricing, and transportation demand management (TDM) strategies. It does not include any increase in roadway capacity beyond the No Action Alternative. All improvements contained in the No Action Alternative are included in Alternative 1, as well as in the other action alternatives. Table 2.1 shows the system elements contained in each of the alternatives.

Alternative 1 includes a physically separated, fixed-guideway HCT system, potentially using some form of rail technology and potentially operating within portions of the existing Burlington Northern Santa Fe (BNSF) right-of-way. The HCT system would serve the major activity centers within the study area, and would include connections to Redmond and Issaquah and west across Lake Washington to Seattle. The connection across Lake Washington is being evaluated as part of the ongoing Trans-Lake Washington Project EIS. Bus transit service would be doubled compared to the current King County 6-year plan. (The effects of recent transit reductions on short-term transit service have not been assumed.) Arterial HOV priority for transit, additional park-and-ride capacity, and additional transit center improvements also would be provided.



A package of basic improvements to I-405 would be implemented, including climbing lanes, auxiliary lanes, I-90/Coal Creek interchange improvements, and I-405/SR 167 interchange improvements, among others. No additional general purpose lanes on I-405 would be provided.

Limited arterial HOV/transit improvements would be provided to facilitate access to I-405 and the fixed-guideway HCT system, along with non-construction treatments such as providing priority for transit at signals and intersections. Regional pricing strategies similar to those currently being studied by the Puget Sound Regional Council (PSRC) would be implemented along with a package of core TDM strategies that are common to all the action alternatives.

Figure 2.2 shows the location of improvements contained in Alternative 1. Appendix A (I-405 Corridor Program - Major Elements of Alternatives) describes the system elements that are the building blocks for the alternatives. Appendix B (Alternatives Project Matrix) identifies the specific transportation improvements and mobility solutions contained within each system element and alternative.

# 2.3 Alternative 2: Mixed Mode with High-Capacity Transit/Transit Emphasis

This alternative attempts to improve mobility options in the study area relative to Alternative 1 by providing the same substantial commitment to transit, combined with the minimum increase in roadway capacity for HOV and general purpose traffic. To do this, Alternative 2 would implement a new physically separated, fixed-guideway HCT system, substantial expansion of local bus transit service, one added lane in each direction on I-405, and improvements to connecting arterials. All improvements contained in the No Action Alternative are included in Alternative 2, as well as in the other action alternatives. Table 2.1 shows the system elements contained in each of the alternatives.

Alternative 2 includes a physically separated, fixed-guideway HCT system, potentially using some form of rail technology. The HCT system would serve the major activity centers within the study area, and would include connections to Redmond and Issaquah and west across Lake Washington to Seattle. The connection across Lake Washington is being evaluated as part of the ongoing Trans-Lake Washington Project EIS. Bus transit service would be doubled compared to the current King County 6-year plan. Arterial HOV priority for transit, additional park-and-ride capacity, and additional transit center improvements are included, as well as completion of the HOV freeway-to-freeway ramps along I-405.

To increase general purpose capacity, I-405 would be widened by one lane in each direction. One lane also would be added in each direction on SR 167 to the study area boundary. The package of basic improvements to I-405 would be implemented, along with the core TDM strategies that are common to all action alternatives. New capacity improvements on connecting arterials and freeways would be provided along with planned arterial improvements of local jurisdictions.

Figure 2.3 shows the location of improvements contained in Alternative 2. Appendix A (I-405 Corridor Program - Major Elements of Alternatives) describes the system elements for the alternatives. Appendix B (Alternatives Project Matrix) identifies the specific transportation improvements and mobility solutions contained within each system element and alternative.

#### 2.4 Alternative 3: Mixed Mode Emphasis

This alternative attempts to substantially improve mobility options for all travel modes and to provide a HCT system throughout the study area at a lower cost than the physically separated, fixed-guideway system proposed in Alternatives 1 and 2. To do this, Alternative 3 would implement a new bus rapid transit (BRT) system, substantial expansion of local bus transit service, two added lanes in each direction on I-405, and improvements to arterials within the study area. All improvements contained in the No Action Alternative are included in Alternative 3, as well as in the other action alternatives. Table 2.1 shows the system elements contained in each of the alternatives.

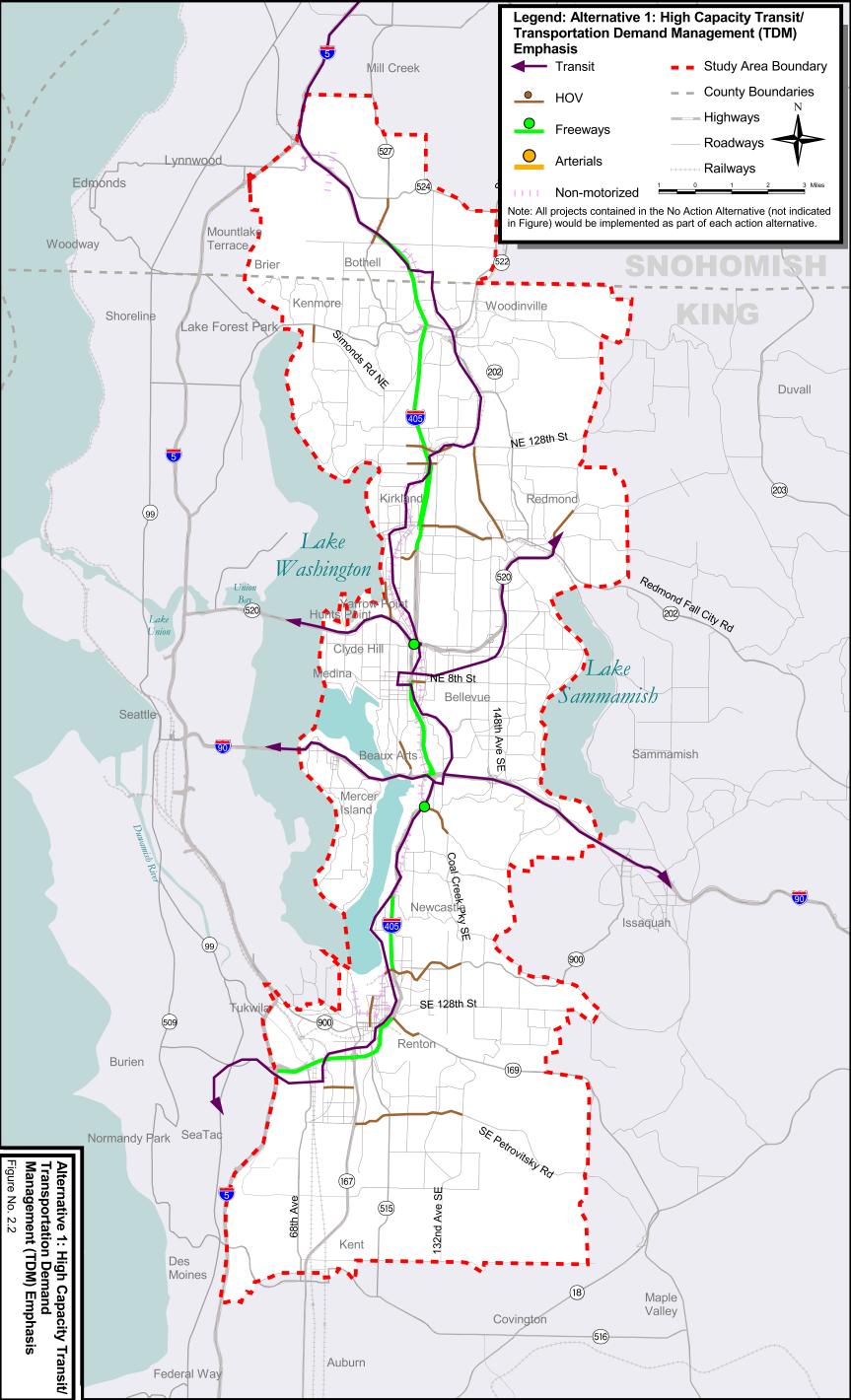
Alternative 3 includes a BRT system operating in improved-access HOV lanes on I-405, I-90, and SR 520. The BRT system would serve the major activity centers within the study area, and would include connections to Redmond and Issaquah and west across Lake Washington to Seattle. The connection across Lake Washington is being evaluated as part of the ongoing Trans-Lake Washington Project EIS. Bus transit service would be doubled compared to the current King County 6-year plan. Improved arterial HOV priority for transit, park-and-ride capacity, transit center improvements, and HOV direct access are included, as well as completion of the HOV freeway-to-freeway ramps along I-405.

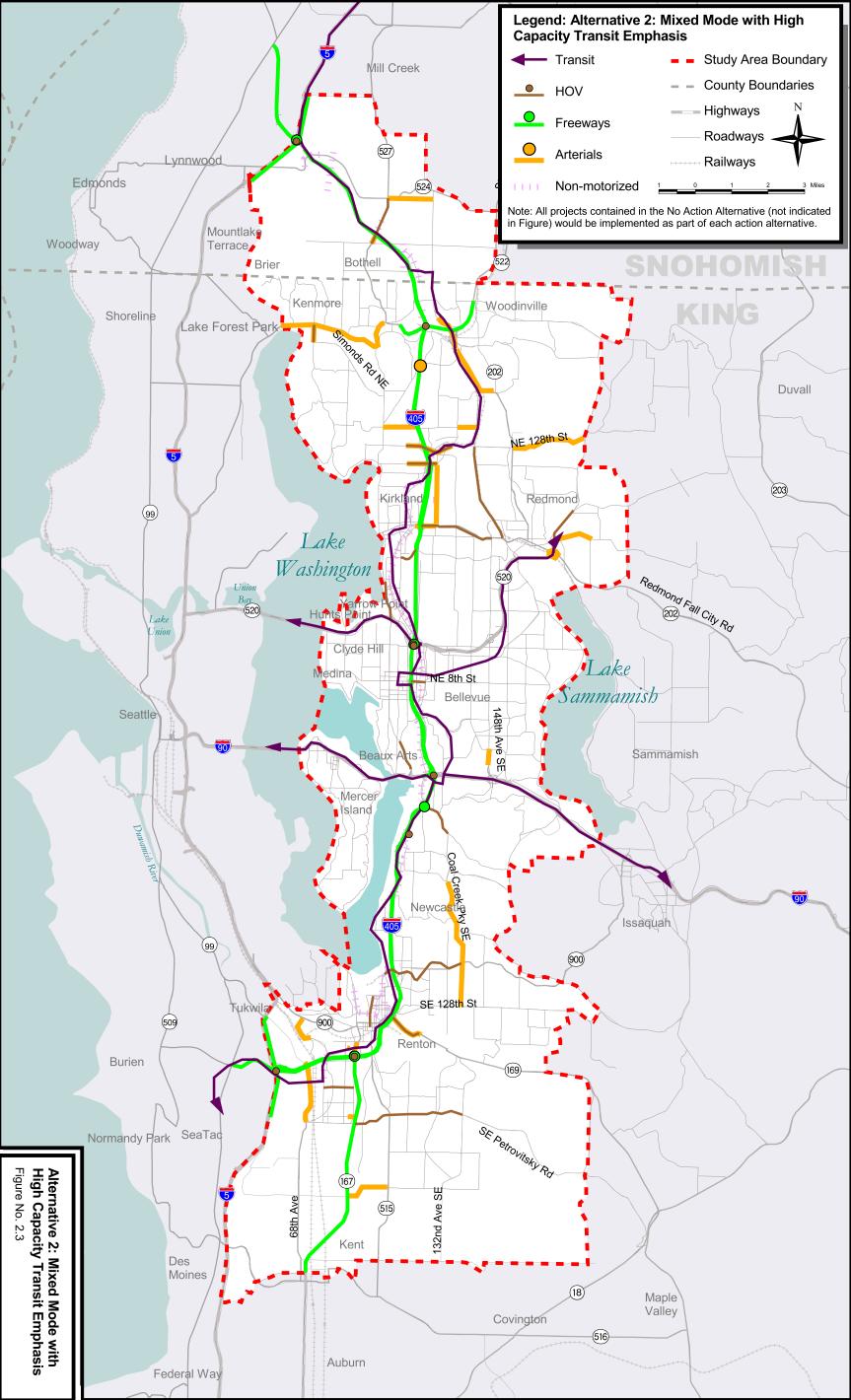
This alternative would substantially increase capacity for general purpose traffic on I-405 by adding two lanes in each direction and improving major interchanges. These added general purpose lanes replace most of the auxiliary and climbing lanes contained in the package of basic improvements to I-405 that are common to the other action alternatives. One lane would be added in each direction on SR 167 to the study area boundary. The core TDM strategies would be implemented. New capacity improvements on connecting arterials and freeways would be provided. Selected arterial missing links would be completed together with planned arterial improvements of local jurisdictions.

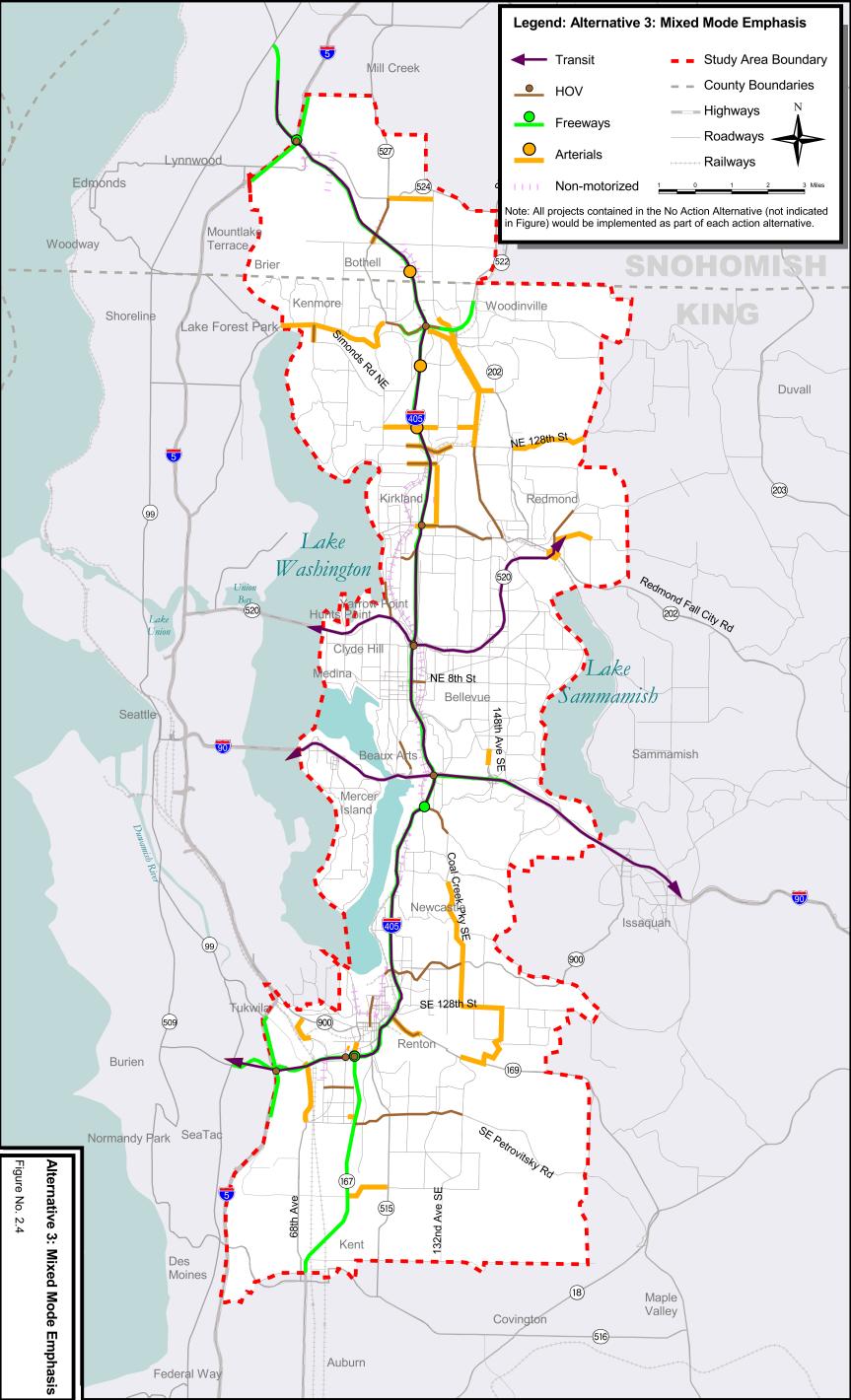
Figure 2.4 shows the location of improvements contained in Alternative 3. Appendix A (I-405 Corridor Program - Major Elements of Alternatives) describes the system elements for the alternatives. Appendix B (Alternatives Project Matrix) identifies the specific transportation improvements and mobility solutions contained within each system element and alternative.

# 2.5 Alternative 4: General Capacity Emphasis

This alternative places the greatest emphasis on increasing general purpose and HOV roadway capacity, with substantially less reliance on new transit facilities or added local bus service than any of the other action alternatives. To do this, Alternative 4 would provide one additional lane in each direction on I-405, a new four-lane I-405 express roadway, and the other general purpose and HOV roadway improvements on I-405 and connecting freeways contained in Alternative 3. The expansion of local bus transit service would be about half that proposed under the other action alternatives. All improvements contained in the No Action Alternative are included in Alternative 4, as well as in the other action alternatives. Table 2.1 shows the system elements contained in each of the alternatives.



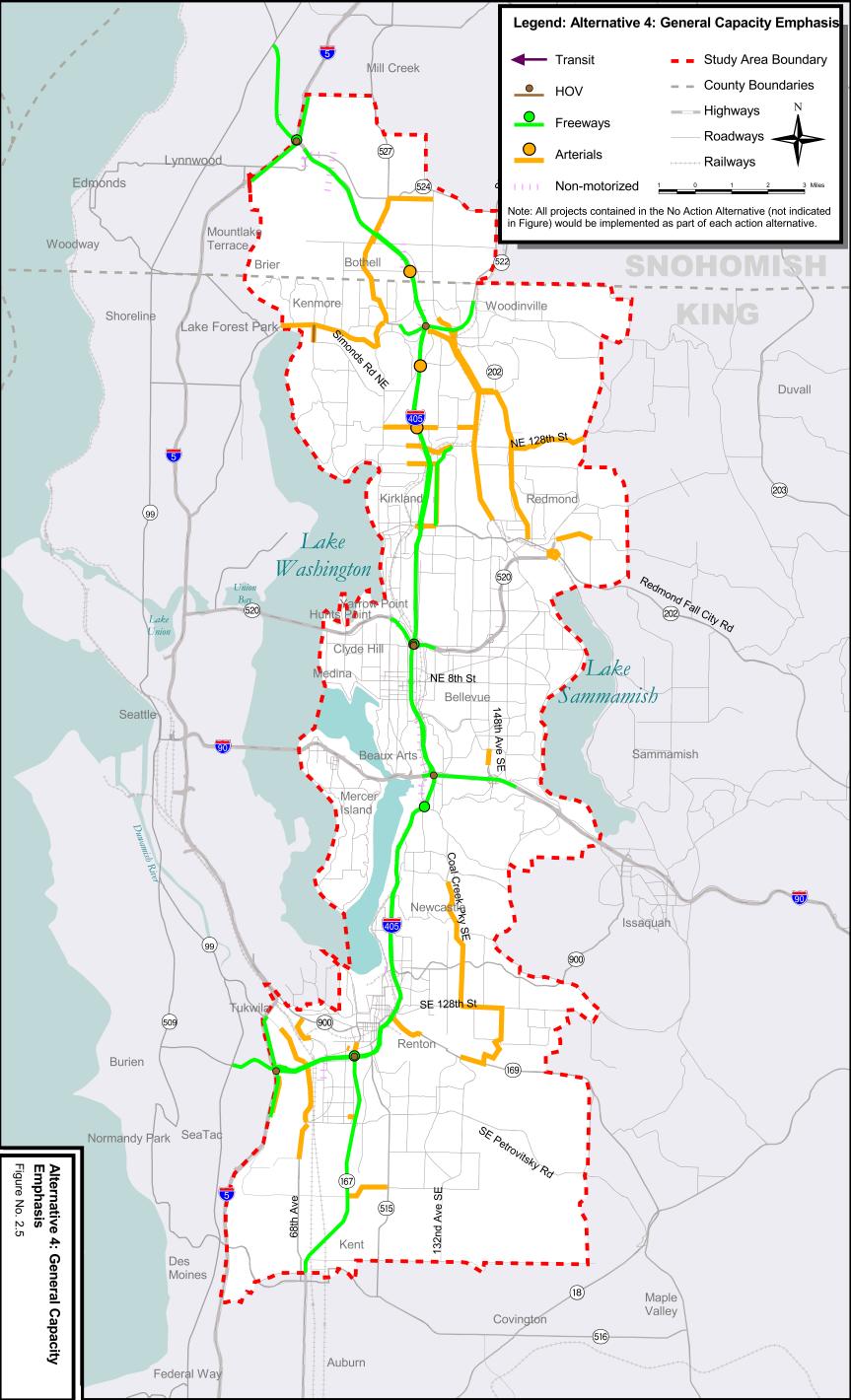




Alternative 4 would expand freeway capacity by adding one additional general purpose lane in each direction on I-405 in most segments, improving major interchanges, and constructing a new four-lane I-405 express roadway consisting of two lanes in each direction with limited access points. Completion of the HOV freeway-to-freeway ramps along I-405 and the package of basic improvements to I-405 would be implemented.

Arterial improvements would include additional expansion of major arterial routes and connections to I-405 in conjunction with the planned arterial improvements of local jurisdictions. Transit in this alternative is assumed to be a continuation of the existing local and express bus transit system with a 50 percent increase in service compared to the current King County 6-year plan. Park-and-ride capacity would be provided along with the core TDM strategies that are common to all action alternatives.

Figure 2.5 shows the location of improvements contained in Alternative 4. Appendix A (I-405 Corridor Program - Major Elements of Alternatives) describes the system elements for the alternatives. Appendix B (Alternatives Project Matrix) identifies the specific transportation improvements and mobility solutions contained within each system element and alternative.



## 3. METHODOLOGY AND COORDINATION

3.1 Evaluation Criteria

Jurisdictional shorelines are designated by Washington's Shoreline Management Act (Chapter 90.58 RCW) and incorporated into local ordinances as a zoning overlay. Evaluation was conducted on the basis of whether or not proposed project improvements entered the shoreland, defined as the 200-foot wide area landward from a designated shoreline. The shoreland is also extended where there were associated 100-year floodplains and wetlands. In most cases, the proposed improvements are an expansion of existing facilities and do not create a major alteration of local activities and land uses. Since the specific location and design of improvements will take place during a future phase of the project, only identification of the fact that the jurisdictional shoreland\_may be entered was used to evaluate potential impacts.

Public access, shoreline protection, enhancement and preservation are important goals of the local shoreline master programs. Consequently, projects involving improvements to trails, bikeways, and other public access features are considered as having beneficial impacts. Roadways, while allowable as a beneficial public purpose, would need to incorporate design features that address the stated goals and purposes of the local shoreline master programs. The analysis assumes that when necessary, shoreline protection, preservation, public access and habitat enhancement can be maintained or improved as part of project development.

# 3.2 Approach to Analyses

To analyze shorelines, the adopted shoreline master programs for King County, Snohomish County, and the cities of Tukwila, Newcastle, Kent, Renton, Bellevue, Kirkland, Redmond, Kenmore, and Bothell were reviewed and jurisdictional shorelines were mapped. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for King and Snohomish Counties were examined to identify the associated floodways and the 100-year floodplains to those jurisdictional streams and lakes within the study area. Critical area maps and the National Wetland Inventory maps were also reviewed where available to identify potential wetland areas that could also be associated with jurisdictional shorelines. The Geographic Information System's (GIS) floodplain and stream coverages were made available to plot as an overlay on each alternative. Floodplains, wetlands and streams that were not designated as jurisdictional shorelines were then removed from the analysis.

Locations where projects, jurisdictional shorelines, associated wetlands and the 100-year floodplain intersected were then evaluated using available information and USGS 7.5 minute topographic maps so that impacts could be estimated. Since revisions to some of the FEMA maps have been made since the King County data base was developed, maps that were revised since 1995 were inspected to see if changes in the 100-year floodplain had been made in the study area. The most recent maps (November 8, 1999) were included in the review, and the maps showing impacts were modified accordingly.

Since GIS data files for floodplains were not available for Snohomish County, each of the individual FEMA maps and shoreline master program maps were checked against maps showing the location of the projects that make up each alternative. Because individual project-specific information is not available for this phase of the project, the boundaries of floodways were assumed to represent the Ordinary High Water Mark (OHWM) and the outer boundary of the 100-year floodplain was assumed to include all associated wetlands. For estimation of impacts, the jurisdictional shoreline boundary was considered to be either 200 feet from the floodway or the 100-year floodplain boundary, which ever was the greater distance.

## 3.3 Coordination with Agencies and Jurisdictions

In addition to review of maps, individual jurisdiction's sensitive areas ordinances, shoreline regulations and master programs were examined in order to gain an understanding of the local management of wetlands, floodplains and jurisdictional shorelines. When it was necessary to get a clarification, local officials were also contacted.

## 3.4 Plans, Policies, and Approvals

Shorelines within the State of Washington are important resources that receive special consideration under Chapter 90.58 RCW, the Shoreline Management Act of 1971. Shorelines of the state are defined in WAC 173-18-040 for streams and rivers and WAC 173-20-030 for lakes. The streams and rivers meeting criteria as shorelines of the state are identified in WAC 173-18-050 through 430, and lakes meeting the criteria for shorelines of the state and shorelines of state-wide significance are identified in WAC 173-20-050 through 810. While the jurisdictional shoreline includes lands within 200 feet of the ordinary high water mark, it is extended outward to also include features such as wetlands and floodplains that are hydrologically connected to these water bodies.

Counties and cities within the study area with designated shorelines have shoreline master programs that include additional development conditions that function as a zoning overlay. In addition to the adopted master programs, the State Department of Ecology has just developed a new shoreline rule (Shoreline Master Program Guidelines – WAC Chapter 173-26) that supercedes WAC Chapter 173-16. The Master Program Guidelines requires local jurisdictions to update their respective master programs by November 29, 2002 (two years from the issuance date of the new rules). A key feature of the final guidelines is a two-path approach that gives cities and counties a choice in writing and implementing their shoreline master programs. "Path A" allows local governments flexibility and creativity in how they meet the standards of the SMA, while "Path B" contains specific measures for protecting shoreline functions.

The National Marine Fisheries Service (NMFS) and the U.S. Fish & Wildlife Service (FWS) have agreed that any local master program that complies with Path B will automatically get an exception under the Endangered Species Act (ESA). This will shield cities and counties from federal penalties and citizen lawsuits if an ESA-listed fish is harmed or its habitat disturbed as the result of an activity covered by the exception.

The adopted Shoreline Master Programs and shoreline regulations for each of the jurisdictions within the study area were also reviewed against the list of projects for each alternative. The adopted shoreline designation maps (identifying the type of "shoreline environment") were also compared with the proposed project locations for each alternative. Summary Tables 5.1 through 5.5 identify the project, the permitting jurisdiction for the project, provides a summary of the designated shoreline environment and applicable regulatory framework, identify potential impacts to the SMA designated shoreline environments and identify potential mitigation.

The following summarizes each jurisdiction's designated shorelines and the shoreline environment designations (in parethenses) within the study area (please refer to Appendix C to see the maps):

King County: Lake Washington (Urban, Rural and Conservancy), Lake Sammamish (Urban

and Rural), Sammamish River (Urban and Rural), Green River (Urban and Rural) Lake Desire (Rural and Conservancy), Spring Lake (Rural and Conservancy), Shadow Lake (Rural and Conservancy), Panther Lake (Rural

and Conservancy), and Lake Youngs (Urban-Lake Residential).

Tukwila: Green/Duwamish River (Manufacturing/Industrial Center and Urban-Open

Space).

Kent: Green River (Urban-River Resource) and Big Soos Creek (Urban-Stream

Corridor).

Renton: Springbrook Creek (Conservancy and Urban – the shoreline area has a special

map further defining the jurisdictional shorelands that include associated wetlands and floodplains), Black River (Conservancy), Cedar River (Conservancy and Urban), May Creek (Conservancy and Urban), and Lake

Washington (Urban).

Newcastle: There are no designated shorelines of the state or statewide significance

within the city limits.

Bellevue: Bellevue has adopted a Shoreline Overlay District (no specific environment

designations) for the following shorelines: Lake Washington, Mercer Slough,

Phantom Lake, Lake Sammamish, and Lower Kelsey Creek.

Kirkland: Lake Washington (Suburban Residential, Urban Residential 1, Urban

Residential 2, Urban Mixed 1, Urban Mixed 2, Conservancy Environment 1, and Conservancy Environment 2). There were no projects listed that would

require a shoreline permit from the City of Kirkland.

Redmond: Lake Sammamish (Urban, Conservancy, and Natural), Sammamish River

(Urban and Rural), Evans Creek (Urban and Conservancy), and Bear Creek

(Urban and Conservancy).

Woodinville: Sammamish River (Urban and Conservancy) and Little Bear Creek (Urban

and Conservancy).

Bothell: Sammamish River (Urban, Rural, and Conservancy), and North Creek (Urban).

Kenmore: Lake Washington (Urban and Conservancy), Swamp Creek (Urban and

Rural), and Sammamish River (Urban and Rural).

Snohomish

County: Swamp Creek (Suburban) and North Creek (Urban).

After reviewing the separate Shoreline Master Programs and comparing the regulations it is assumed that any of the proposed projects could be permitted either through a Shoreline Substantial Development Permit or a Shoreline Conditional Use Permit (if the project involved a more sensitive shoreline area designation (i.e. Conservancy). In reviewing the regulatory framework of each individual jurisdiction it was found that adherence to the requirements to obtain shoreline approvals would require avoidance, minimization and mitigation of all the impacts to the shoreline environment. In many circumstances increased public access opportunities were a regulatory requirement. There was only one shoreline area within the study area designated Natural. This area is at the north end of Lake Sammamish within Marymoor Park. There are no proposed projects within this area.

# 4. AFFECTED ENVIRONMENT

# 4.1 Shorelines in the Study Area

Shorelines of the state within the study were identified by comparing the local shoreline master programs and the list of shorelines of the state (and shorelines of state-wide significance) found in WAC 1773-18-210, WAC 173-18-350, and WAC 173-20-360 with water bodies observed on 7.5 minute USGS maps and aerial photographs. Based on this analysis, the shoreline environment in Table 4.1 were identified within the study area.

Table 4.1: Shorelines within the Study Area

| KING COUNTY   |                 |
|---|-----------------|
| <u>Streams</u>  | <u>Lakes</u>    |
| Swamp Creek   | Lake Washington |
| North Creek   | Lake Sammamish  |
| Bear Creek (Woodinville - mouth near intersection of SR | Cottage Lake    |
| 522 and Sammamish R.)                                   |                 |
| Bear Creek (Redmond - mouth near intersection of SR     | Phantom Lake    |
| 520 and Sammamish R.)                                   |                 |
| Evans Creek   | Angle Lake      |
| Sammamish River   | Panther Lake    |
| Mercer Slough   | Lake Youngs     |
| May Creek   | Lake Desire     |
| Issaquah Creek  | Shady Lake      |
| Cedar River   | Spring Lake     |
| Black River   | Shadow Lake     |
| Springbrook Creek                                       |                 |
| Green River   |                 |
|   |                 |
| Snohomish County  |                 |
| North Creek   |                 |
| Swamp Creek   |                 |

## 5. IMPACT ANALYSIS

The impact analysis stresses the importance of avoidance. It is imperative that projects be designed so that impacts to shorelines are avoided and minimized when avoidance is not an option. Some of the avoidance measures that can be incorporated into individual project planning and design are:

- > Realignment of roadways to keep improvements out of the shoreline
- > Minimizing ROW property acquisition within the shoreline by narrowing roadway shoulders
- Incorporating new public access, shoreline protection and preservation measures and habitat enhancement to the shoreline (on arterial projects) into design when mitigation measures are necessary to address substantial adverse environmental impacts from the project
- > Inclusion of bridge underpasses in design so that access along shorelines is maintained
- Inclusion of shoreline protection, preservation and habitat enhancements in project design
- Modifications to existing projects so that shoreline protection and preservation as well as public access along shorelines is improved
- > Use of aesthetic treatments and barriers to isolate the shoreline from visual and noise effects.
- > Potential purchase to preserve the shoreline as mitigation for direct substantial adverse environmental impacts when avoidance is not possible

#### 5.1 No Action Alternative

Under the No Action Alternative, which includes 60 projects only 12 projects involving 5 jurisdictional shorelines (see Table 5.1) would potentially be impacted. 22 projects are parkand-ride lots not yet sited and will not be analyzed as part of this report, Figure 5.1 shows the location of those No Action Alternative projects in relation to the jurisdictional shorelines.

#### 5.1.1 Construction Impacts

No substantial impacts to the shoreline are anticipated during construction. Avoidance of the shoreline environment (if possible) should be the main concern during project design. However, potential impacts to the shoreline environment include filling, armoring, and disrupting existing public access points. The filling and armoring could result in a loss of near shore environment that is important to juvenile salmonids making their way from a riverine environment to an esturine environment. Impacts to the near shore environment are discussed in the *I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report* (DEA, 2001) and will not be repeated here. Filling and armoring within the shoreline environment also may result in a loss of the floodways' and floodplains' capacity to absorb floodwaters in a non-disturbed shoreline environment. Within areas that have already been urbanized or

disrupted by prior construction activities, in many instances filling and armoring of the shoreline banks may have already occurred. Impacts from new projects that may require increased filling or armoring may not be as substantial an impact (due to previous losses) when compared to the non-disturbed shoreline environment. This is not to say that additional losses are insignificant. Under today's regulatory requirement, enhancement or replacement are required to meet today's regulations. Meeting the regulatory requirements will mean that additional impacts will be avoided, minimized and mitigated. These issues are addressed in the I-405 Corridor Program Draft Floodplain (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), Surface Water Resources (CH2M HILL, 2001), and Wetlands (DEA, 2001) Expertise Reports and will not be addressed in detail here. Potential disruption from construction activities may cause temporary disruption at public shoreline access opportunities (i.e. Sammamish River Trail). This impact will only last during construction. Detours around the construction activity can provide relief and improvements for public access may result as part of the construction project.

#### 5.1.2 Operational Impacts

Operational impacts of the transportation system should not have substantial adverse environmental impacts to shorelines of the state or state-wide significance. Impacts to the near shore environment are addressed within the I-405 Corridor Program Draft Fish and Aquatic Habitat and Floodplain Expertise Reports (DEA, 2001) and will not be repeated here. However, without the avoidance measures discussed at the introduction to this section, public access and habitat enhancement to jurisdictional shorelines could be restricted. Additionally, habitat could be impacted through alteration or removal so that both fish and wildlife would be affected. Because avoidance measures can readily be incorporated into project design, it is assumed that there would be no substantial impacts to jurisdictional shorelines.

Table 5.1: Shorelines Potentially Impacted by the No Action Alternative

| Jurisdiction             |                                 | Actions  | Shoreline Analysis   |
|--------------------------|---------------------------------|--|--|
| Element #7.              | Committed HO                    | OV Projects  |  |
| Woodinville              | HOV-102;<br>R.HOV-58;<br>R.PA-1 | Woodinville Arterial Enhancements/HOV arterial enhancements (project locations were not specifically identified)   | Improvements may be located in the Sammashish River and Bear Creek shoreline environments. The shoreline environment designations in this area are Conservancy and Urban. In the Conservancy environment, principal arterials are list as a nonpermitted use. They are listed as a permitted use in the Urban environment. The city would require a shoreline conditional use permit and a shoreline substantial development permit subject to the requirements of their shoreline regulations, section 4.20.2.  |
| Bothell                  | R.HOV-62<br>R.HOV-63            | SR 522 Campus Access and SR 527 improvements   | <b>R.HOV-62:</b> SR 522 improvements may be located in the Sammashish River shoreline environment. The shoreline environment designation in this area is Urban. <b>R.HOV-63:</b> SR 527 improvements may be located in the North Creek shoreline environment. The shoreline environment designation in this area is Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Element #10.             |                                 | Freeway Projects   |  |
| Renton                   | R-55                            | I-405 / SR167 Interchange/<br>Construct new southbound I-405-to-<br>southbound SR 167 ramp<br>modification.  | A portion of the Springbrook Creek shoreline (potentially associated wetland and floodplain) is near the I-405/SR 167 interchange. The shoreline environment designation in this area is Conservancy. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |
| Element #17.             | Committed A                     | Arterial Projects  |  |
| Redmond &<br>King County | R-25<br>R-26<br>R-28            | R-25: SR 202 Corridor Improvements (East Lake Sammamish Parkway to Sahalee Way): Widen to 3/5 lanes; intersection improvements with bike/pedestrian facilities. R-26: NE 90 St (Willows Rd to SR 202) Construct new 4/5 lanes + bike facilities. R-28: West Lake Sammamish | R-25: Evans Creek is crossed twice where the shoreline is approximately 200 feet wide. Approximately 120,00 square feet of shoreline may be effected. Evans Creek is designated as a Conservancy shoreline environment in both master programs.  R-26: This corridor project is crosses the Sammamish River and its associated floodplain. The extended floodplain increases the shoreline management jurisdictional boundary. The designation is Urban.  R-28: This corridor project is adjacent to the Sammamish River and its associated floodplain. The extended floodplain increases the shoreline management jurisdictional boundary. The designation in this area is Urban and Rural  These projects would be permitted subject to the regulatory requirements found in RMC 20D.150.10- |
|                          |                                 | Parkway (Leary Way to Bel-Red Rd) Widen to 4/5 lanes + CGS, bike lanes.  | 160 and in KCC 25.32.  |
| Renton                   | R-36                            | Oakesdale Ave SW (SW 31st to SW 16th) Construct new 5 lane roadway with CGS  | Springbrook Creek shoreline (associated wetlands and floodplain) intersects with this road extension project near the I-405/SR 167 interchange. The shoreline environment designation in this area is Urban and Conservancy. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |

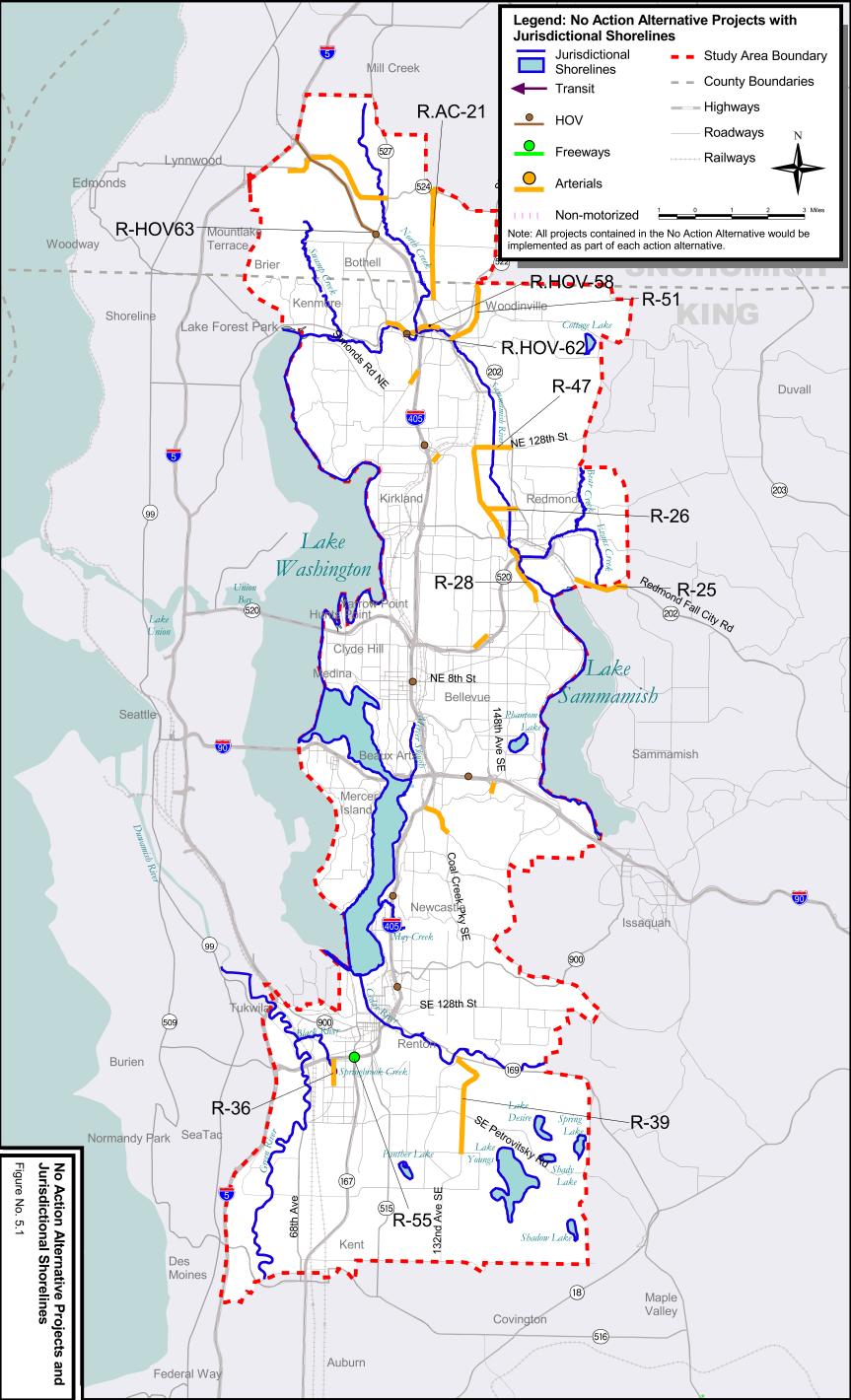
| Jurisdiction |      | Actions  | Shoreline Analysis  |
|--------------|------|--|---|
| King County  | R-47 | NE 124 St (Willows Rd to SR 202)<br>Widen to 4/5 lanes + CGS, bike<br>facilities; traffic signal.    | Sammamish River is crossed where the river floodway is 150 feet wide. The floodplain extends the shoreline management jurisdictional area (approximately 1,000 feet wide), and approximately 46,000 square feet of shoreline may be affected. The shoreline environment designation in this area is Rural.  |
|              |      |  | These projects would be permitted subject to the regulatory requirements found in KCC 25.32.  |
| Woodinville  | R-51 | Woodinville-Snohomish Rd/140 Ave<br>NE (NE 175 St to SR 522) Widen<br>to 4/5 lanes + CGS, bike lanes | Bear Creek and its associated floodplain (which extends the shoreline jurisdictional area) runs adjacent to this corridor project. The exact extent of this project's design is not known at this time. It is impossible to quantify any potential losses and impacts. The shoreline environment designation in this area is Urban and Conservancy. Bear Creek is only designated a shoreline of the state up to the 12300 Block of Woodinville-Sammamish Highway. The city would require a shoreline conditional use permit and a shoreline substantial development permit subject to the requirements of their shoreline regulations, section 4.20.2. |

#### **Typical Shoreline Environmental Impacts:**

- Increased impervious surfaces creating additional stormwater runoff as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Increased sedimentation as discussed in the I-405 Corridor Program Draft Surface Water Resources Expertise Report (CH2M HILL, 2001)
- Habitat loss as discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001)

#### **Typical Shoreline Environment Mitigation Measures:**

- Adherence to regulatory requirements as listed in the individual jurisdiction's shoreline and sensitive areas regulations would provide proper mitigation to offset or avoid impacts to the shoreline environment.
- Compensate for lost floodplain capacity (see I-405 Corridor Program Draft Floodplain Expertise Report [DEA, 2001])
- Provide habitat restoration/enhancement (see I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report [DEA, 2001])
- Land acquisition for shoreline preservation or increased public access improvements



# 5.2 Alternative 1: High-Capacity Transit/Transportation Demand Management

Alternative 1 includes 1039 projects ranging from basic improvements to I-405 to high-capacity transit. Twenty-five of the Alternative 1 projects enter or cross jurisdictional shorelines. Ten different jurisdictional shorelines identified in Table 5.2 are either crossed or entered by the projects proposed in Alternative 1. Figure 5.2 shows the location of Alternative 1 projects in relation to jurisdictional shorelines. The projects listed in the No Action Alternative are included in this Alternative but have already been discussed and are in addition to the totals discussed above.

#### 5.2.1 Construction Impacts

No substantial impacts to the shoreline are anticipated during construction. Avoidance of the shoreline environment (if possible) should be the main concern during project design. However, potential impacts to the shoreline environment include filling, armoring, and disrupting existing public access points. The filling and armoring could result in a loss of near shore environment that is important to juvenile salmonids making their way from a riverine environment to an esturine environment. Impacts to the near shore environment are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001) and will not be repeated here. Filling and armoring within the shoreline environment also may result in a loss of the floodways' and floodplains' capacity to absorb floodwaters in a non-disturbed shoreline environment. Within areas that have already been urbanized or disrupted by prior construction activities, in many instances filling and armoring of the shoreline banks may have already occurred. Impacts from new projects that may require increased filling or armoring may not be as substantial an impact (due to previous losses) when compared to the non-disturbed shoreline environment. This is not to say that additional losses are insignificant. Under today's regulatory requirement, enhancement or replacement are required to meet today's regulations. Meeting the regulatory requirements will mean that additional impacts will be avoided, minimized and mitigated. These issues are addressed in the I-405 Corridor Program Draft Floodplain (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), Surface Water Resources (CH2M HILL, 2001), and Wetlands (DEA, 2001) Expertise Reports and will not be addressed in detail here. Potential disruption from construction activities may cause temporary disruption at public shoreline access opportunities (i.e. Sammamish River Trail). This impact will only last during construction. Detours around the construction activity can provide relief and improvements for public access may result as part of the construction project.

#### 5.2.2 Operational Impacts

Operational impacts of the transportation system should not have substantial adverse environmental impacts to shorelines of the state or state-wide significance. Impacts to the near shore environment are addressed within the I-405 Corridor Program Draft Fish and Aquatic Habitat and Floodplain Expertise Reports (DEA, 2001) and will not be repeated here. However, without the avoidance measures discussed at the introduction to this section, public access and habitat enhancement to jurisdictional shorelines could be restricted. Additionally, habitat could be impacted through alteration or removal so that both fish and wildlife would be affected. Because avoidance measures can readily be incorporated into project design, it is assumed that there would be no substantial impacts to jurisdictional shorelines.

Table 5.2: Shorelines Potentially Impacted by Alternative 1

| Jurisdiction           |                    | Actions   | Shoreline Analysis   |
|------------------------|--------------------|---|--|
| Element #4.            | High-Capac         | city Transit  |  |
| Tukwila &<br>Renton    | T.HCT-1            | HCT – SeaTac to Renton CBD  | Springbrook Creek shoreline is crossed by I-405 and is also adjacent for approximately 2,500 feet. The shoreline environment designation in this area is Urban and Conservancy. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190. Green River shoreline is approximately 500 feet wide where I-405 crosses. The Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. |
| Renton                 | T.HCT-2            | HCT-Renton CBD to NE 44th (Port Quendall)                                   | May Creek shoreline is crossed by I-405 where it is 450 feet wide. Cedar River has a shoreline approximately 500 feet wide where it is crossed by I-405. The shoreline environment designation in this area is Urban and Conservancy. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |
| Bellevue &<br>Issaquah | T.HCT-4            | HCT – Factoria to Issaquah  | Issaquah Creek is crossed where the shoreline is approximately 450 feet wide. Issaquah would require a Substantial Development permit. The shoreline is designated Urban within the I-90 right-of-way. Bellevue has designated the Mercer Slough area as a Shoreline Overlay District. The city will require a substantial development permit pursuant to Part 20.30R LUC.   |
| Bellevue &<br>Redmond  | T.HCT-6            | HCT - Bellevue to Redmond   | Sammamish River is designated Urban and Conservancy. This project would be permitted subject to the regulatory requirements found in RMC 20D.150.10-160. Bellevue has designated the Mercer Slough area as a Shoreline Overlay District. The city will require a substantial development permit pursuant to Part 20.30R LUC.   |
| Bothell                | T.HCT-8<br>T.HCT-9 | T.HCT-8: HCT - Totem Lake to Bothell T.HCT-9: HCT - Bothell to Lynnwood     | T.HCT-8: Sammamish River is designated as Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  T.HCT-9: North Creek is designated as Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.   |
| Element #6.            | Arterial HOV       | <i></i>   |  |
| Bothell                | HOV-41             | Construct NB HOV lane.<br>SR 527 from SE 228 <sup>th</sup> Street to SR 524 | North Creek is crossed where the shoreline zone is 500 feet wide. The shoreline environment designation in this area is Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |

| Jurisdiction                           |                                | Actions  | Shoreline Analysis  |
|--|--------------------------------|--|---|
| Renton                                 | R.HOV-43<br>R.IC-4<br>R.HOV-44 | R.HOV-43 & R.IC-4: SR 169 from SR 405 to Riverview Park Vicinity - HOV/Transit Preferential treatment. R.HOV-44: SW 27th Street Corridor in Renton from Oaksdale Avenue to SR 167  | <ul> <li>R.HOV-43 &amp; R.IC-4: Cedar River is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.</li> <li>R.HOV-44: Springbrook Creek is crossed where the shoreline is 450 feet wide. Approximately 25,000 square feet shoreline area may be affected. The shoreline environment designation in this area is Urban and Conservancy. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.</li> </ul> |
| Redmond                                | R.HOV-47<br>R.HOV-55           | R.HOV-47: Avondale Road from<br>Novelty Hill Road to Avondale<br>Way/Construct SB HOV lane<br>R.HOV-55: Willows Rd (Redmond<br>Way to NE 124 St)   | <b>R.HOV-47:</b> Bear Creek (Urban and Conservancy) is adjacent and is crossed where the shoreline is 500 feet wide. Approximately 6,000 square feet of shoreline area would be converted to HOV use. <b>R.HOV-55:</b> Sammamish River is designated as Urban and Rural. The project may be adjacent to the floodplain of the river. This would trigger the shoreline permit requirement.  These projects would be permitted subject to the regulatory requirements found in RMC 20D.150.10-160.  |
| Kenmore                                | HOV-53<br>R.PA.11              | 68th Avenue NE (Simonds Road to SR 522) (Both project numbers)   | Sammamish River (Urban and Conservancy) crossed where shoreline zone is approximately 450 feet wide. The city has adopted Title 25 from King County Code. Permitting issues would be similar.   |
| Kirkland,<br>Bellevue                  | R.HOV-56                       | Lake Washington Blvd (SR 520 to<br>Yarrow Bay) - HOV lanes   | Lake Washington is designated as Urban Residential 2. The city would require a substantial development permit.  |
| Bellevue                               | R.HOV-60                       | Bellevue Way - I-90 to South Bellevue<br>Park-and-Ride Vicinity  | Bellevue has designated the Mercer Slough area as a Shoreline Overlay District. The city will require a substantial development permit pursuant to Part 20.30R LUC.   |
| Element #10.                           | Basic I-405                    | Improvement Projects   |   |
| Renton                                 | R.Bl.1<br>R.B1.7<br>R.Bl.14    | R.Bl-1: SR 167 Interchange – Direct<br>Connection with auxiliary lane SB SR<br>169 to SR 167<br>R.Bl-7: Kennydale Hill climbing lane:<br>SR 900 to 44 <sup>th</sup> NB 900 to 30 <sup>th</sup> , SB 44 <sup>th</sup> – 30 <sup>th</sup><br>R.Bl.14: NB Auxiliary Lane I-5 to SR<br>167 | <b>R.Bl-1:</b> Patches of Springbrook Creek shoreline (potentially associated wetlands- Conservancy) are near the I-405/SR 167 interchange. Springbrook Creek shoreline is also crossed by I-405 (Urban). Cedar River has a shoreline approximately 500 feet wide where it is crossed by I-405. <b>R.Bl-7:</b> May Creek shoreline is crossed by I-405 where it is approximately 450 feet wide (Urban & Conservancy). <b>R.Bl.14:</b> Green River is designated as Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.                                    |
| Bothell, King<br>County, &<br>Kirkland | R.BI.5                         | SB SR 522 to 124th continue climbing lane as an auxiliary lane   | North Creek is designated Urban. According to Bothell's master program, the project would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Bothell                                | R.BI.6                         | NB auxiliary lane SR 522 to SR 527   | North Creek is designated Urban. According to Bothell's master program, the project would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. The Sammamish River is also designated Urban and Conservancy.  |
| Bellevue                               | R.Bl.8                         | I-90 to Bellevue SB HOV direct<br>connection to I-90 west  | Mercer Slough shoreline is approximately 450 feet wide where it is crossed by I-90. This is designated as a Shoreline Overlay District and not given any particular shoreline environment designation. The city will require a substantial development permit pursuant to Part 20.30R LUC.  |

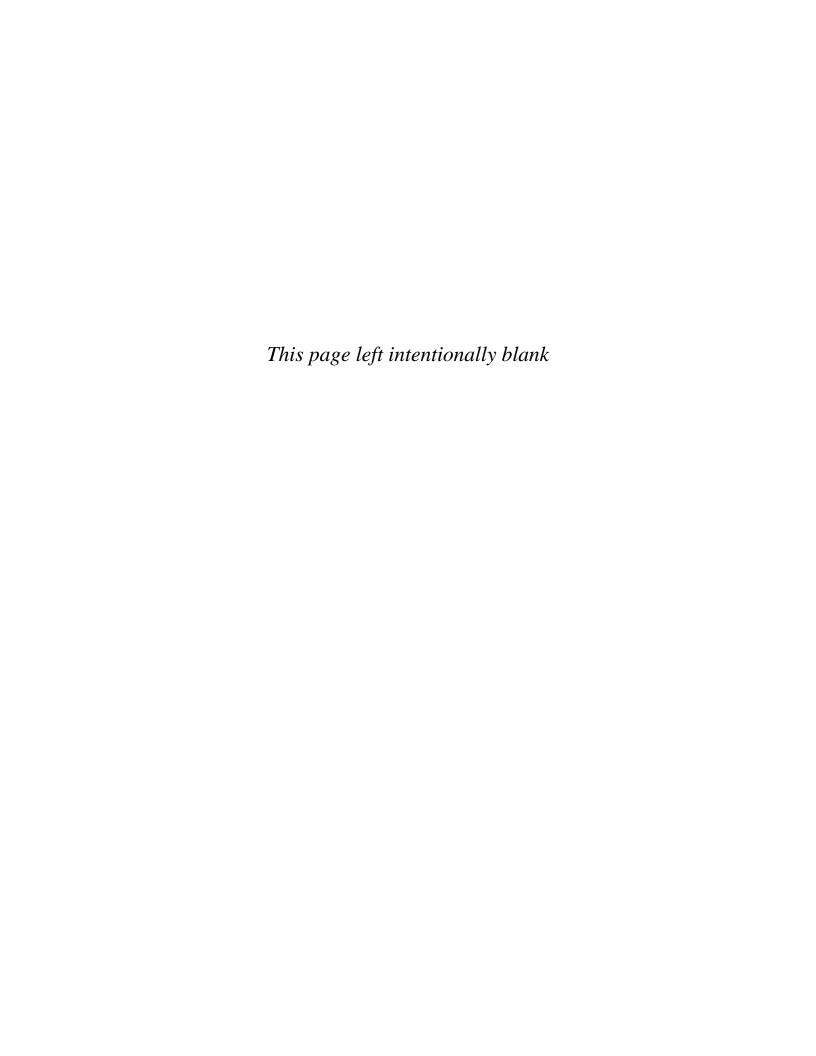
| Jurisdiction |  | Actions   | Shoreline Analysis  |
|--------------|--|---|---|
| Element #21. | Pedestrian a                                     | nd Bicycle Facilities (P&B) - Pedestria   | n/Bicycle Connections   |
| Renton       | NM.P&B-<br>14;<br>NM.P&B-<br>15<br>NM.P&B-<br>16 | NM.P&B-14: Cedar River Trail S. Extension – I-405 to Burnett Avenue – Add pedestrian/bike facilities NM.P&B-15: Cedar River Trail/Lake Washington Blvd Connector - Cedar River Trail to Lk Wash Blvd Loop - Add ped/bike facilities NM.P&B-16: Cedar-Duwamish Trail Connection - I-405 to Interurban Ave. S Add ped/bike facilities | NM.P&B-14: Cedar River shoreline is adjacent to the proposed trail for approximately 2,000 feet. It is designated Urban.  NM.P&B-15: The Cedar River is designated Urban.  NM.P&B-16: Springbrook Creek is designated Urban.  A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
| Bothell      | NM.P&B-<br>5                                     | North Creek Trail Link – 240 <sup>th</sup> to 232 <sup>nd</sup> , add pedestrian/bike trail.  | A trail along North Creek would be beneficial to public access and habitat enhancement and habitat enhancement. The shoreline environment designation in this area is Urban. According to their master program, the project would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Tukwila      | NM.P&B-<br>19                                    | SR-181/W. Valley Hwy - crossing I-<br>405 from Strander Blvd to Fort Dent<br>Way - Add bike lanes   | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required.   |
| Element #21. | Pedestrian a                                     | and Bicycle Facilities (P&B) I-405 Cros   | ssings  |
| Bothell      | NM.CR-2<br>NM. CR-7                              | NM.CR-2: Fitzgerald Rd/27th Ave crossing I-405 from 228th St. SE to 240th St. SE - Add ped/bike facility NM. CR-7: Connection between Sammamish River Trail and North Creek Trail between SR 522 and NE 195th Street  | NM.CR-2: North Creek is designated Urban.  NM. CR-7: Sammamish River shoreline zone entered along river. A ground level trail would enhance public access and habitat enhancement. The North Creek shoreline may be entered. An adjacent pathway would be beneficial to public access and habitat enhancement. The shoreline environment designation in this area is Urban. According to their master program, the project would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. |

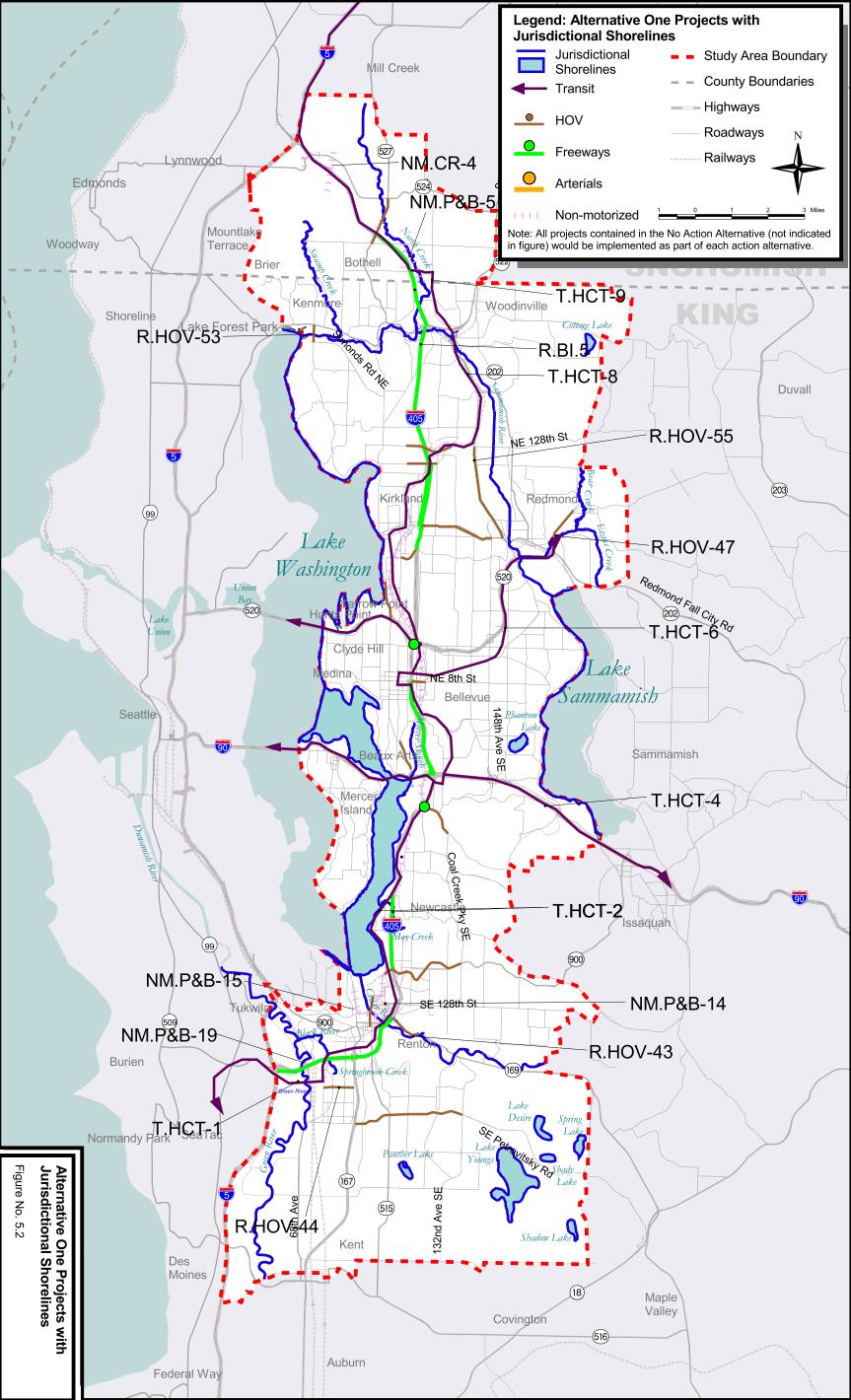
## **Typical Shoreline Environmental Impacts:**

- Increased impervious surfaces creating additional stormwater runoff as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Increased sedimentation as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Habitat loss as discussed in the *I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report* (DEA, 2001)

#### **Typical Shoreline Environment Mitigation Measures:**

- Adherence to regulatory requirements as listed in the individual jurisdiction's shoreline and sensitive areas regulations would provide proper mitigation to offset or avoid impacts to the shoreline environment.
- Compensate for lost floodplain capacity (see *I-405 Corridor Program Draft Floodplain Expertise Report* [DEA, 2001])
- Provide habitat restoration/enhancement (see I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report [DEA, 2001])
- Land acquisition for shoreline preservation or increased public access improvements





## 5.3 Alternative 2: Mixed Mode with High-Capacity Transit/Transit Emphasis

Alternative 2 includes 173 projects ranging from basic improvements to I-405 to high-capacity transit and a number of arterial projects. Thirty-five of the Alternative 2 projects either enter or cross jurisdictional shorelines. Ten different jurisdictional shorelines, identified in Table 5.3, are either crossed or entered by the projects proposed in Alternative 2. Figure 5.3 shows the location of Alternative 2 projects with respect to jurisdictional shorelines in the study area. The projects listed in the No Action Alternative are included in this Alternative but have already been discussed and are in addition to the totals discussed above.

#### 5.3.1 Construction Impacts

No substantial impacts to the shoreline are anticipated during construction. Avoidance of the shoreline environment (if possible) should be the main concern during project design. However, potential impacts to the shoreline environment include filling, armoring, and disrupting existing public access points. The filling and armoring could result in a loss of near shore environment that is important to juvenile salmonids making their way from a riverine environment to an esturine environment. Impacts to the near shore environment are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001) and will not be repeated here. Filling and armoring within the shoreline environment also may result in a loss of the floodways' and floodplains' capacity to absorb floodwaters in a non-disturbed shoreline environment. Within areas that have already been urbanized or disrupted by prior construction activities, in many instances filling and armoring of the shoreline banks may have already occurred. Impacts from new projects that may require increased filling or armoring may not be as substantial an impact (due to previous losses) when compared to the non-disturbed shoreline environment. This is not to say that additional losses are insignificant. Under today's regulatory requirement, enhancement or replacement are required to meet today's regulations. Meeting the regulatory requirements will mean that additional impacts will be avoided, minimized and mitigated. These issues are addressed in the I-405 Corridor Program Draft Floodplain (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), Surface Water Resources (CH2M HILL, 2001), and Wetlands (DEA, 2001) Expertise Reports and will not be addressed in detail here. Potential disruption from construction activities may cause temporary disruption at public shoreline access opportunities (i.e. Sammamish River Trail). This impact will only last during construction. Detours around the construction activity can provide relief and improvements for public access may result as part of the construction project.

#### 5.3.2 Operational Impacts

Operational impacts of the transportation system should not have substantial adverse environmental impacts to shorelines of the state or state-wide significance. Impacts to the near shore environment are addressed within the I-405 Corridor Program Draft Fish and Aquatic Habitat and Floodplain Expertise Reports (DEA, 2001) and will not be repeated here. However, without the avoidance measures discussed at the introduction to this section, public access and habitat enhancement to jurisdictional shorelines could be restricted. Additionally, habitat could be impacted through alteration or removal so that both fish and wildlife would be affected. Because avoidance measures can readily be incorporated into project design, it is assumed that there would be no substantial impacts to jurisdictional shorelines.

Table 5.3: Shorelines Potentially Impacted by Alternative 2

| Jurisdiction           |   | Actions   | Shoreline Analysis   |  |  |
|------------------------|---|---|--|--|--|
| Element #4.            | High-Capaci                                       | ty Transit  |  |  |  |
| Tukwila &<br>Renton    | T.HCT-1   | HCT - SeaTac to Renton CBD  | Discussed under Alternative 1 -Table 5.2   |  |  |
| Renton                 | T.HCT-2   | HCT-Renton CBD to NE 44 <sup>th</sup> (Port Quendall)   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Bellevue &<br>Issaquah | T.HCT-4   | HCT – Factoria to Issaquah  | Discussed under Alternative 1 -Table 5.2   |  |  |
| Bellevue &<br>Redmond  | T.HCT-6   | HCT - Bellevue to Redmond   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Kirkland &<br>King Co  | T.HCT-8   | HCT - Totem Lake to Bothell   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Bothell                | T.HCT-9   | HCT - Bothell to Lynnwood   | Discussed under Alternative 1 -Table 5.2   |  |  |
|                        | <b>Arterial HOV</b>                               |   |  |  |  |
| Bothell                | HOV-41  | Construct NB HOV lane.<br>SR 527 from SE 228th Street to SR 524   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Renton                 | R.HOV-43<br>R.IC-4<br>R.HOV-44                    | R.HOV-43 & R.IC-4: SR 169 from SR 405 to Riverview Park Vicinity - HOV/Transit Preferential treatment. R.HOV-44: SW 27th Street Corridor in Renton from Oaksdale Avenue to SR 167 | Discussed under Alternative 1 -Table 5.2   |  |  |
| Redmond                | R.HOV-47<br>R.HOV-55                              | R.HOV-47: Avondale Road from Novelty Hill Road to Avondale Way/Construct SB HOV lane R.HOV-55: Willows Rd (Redmond Way to NE 124 St)  | Discussed under Alternative 1 -Table 5.2   |  |  |
| Kenmore                | HOV-53<br>R.PA.11                                 | 68th Avenue NE (Simonds Road to SR 522)<br>(Both project numbers)   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Kirkland,<br>Bellevue  | R.HOV-56  | Lake Washington Blvd (SR 520 to Yarrow<br>Bay) - HOV lanes  | Discussed under Alternative 1 -Table 5.2   |  |  |
| Bellevue               | R.HOV-60  | Bellevue Way - I-90 to South Bellevue<br>Park-and-Ride Vicinity   | Discussed under Alternative 1 -Table 5.2   |  |  |
| Element #7.            | Element #7. HOV Interchange Ramps (Direct Access) |   |  |  |  |
| Bellevue               | R.HOV-27  | SR 90 Interchange Fwy to Fwy HOV ramps,   | Mercer Slough shoreline is approximately 450 feet wide where it is crossed by I-90. This is designated as a Shoreline Overlay District and not given any particular shoreline environment designation. The city will require a substantial development permit pursuant to Part 20.30R LUC. |  |  |
| Bothell                | R.HOV-29  | SR 522 Fwy to Fwy HOV Ramps   | Sammamish River is designated as Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.                                 |  |  |

| Jurisdiction                           |                             | Actions  | Shoreline Analysis   |
|--|-----------------------------|--|--|
| Element #10.                           | Basic I-405                 | Improvement Projects   | -  |
| Renton                                 | R.Bl.1<br>R.B1.7<br>R.Bl.14 | R.Bl.1: SR 167 Interchange – Direct<br>Connection with auxiliary lane SB SR 169 to<br>SR 167<br>R.Bl.7: Kennydale Hill climbing lane: SR<br>900 to 44 <sup>th</sup> NB 900 to 30 <sup>th</sup> , SB 44 <sup>th</sup> – 30 <sup>th</sup><br>R.Bl.14: NB Auxilliary Lane I-5 to SR 167 | Discussed under Alternative 1 -Table 5.2   |
| Bothell, King<br>County, &<br>Kirkland | R.BI.5                      | SB SR 522 to 124th continue climbing lane as an auxiliary lane   | Discussed under Alternative 1 -Table 5.2   |
| Bothell                                | R.BI.6                      | NB auxiliary lane SR 522 to SR 527   | Discussed under Alternative 1 -Table 5.2   |
| Bellevue                               | R.Bl.8                      | I-90 to Bellevue SB HOV direct connection to I-90 west   | Discussed under Alternative 1 -Table 5.2   |
| Element #10A                           | . One Addi                  | itional GP or Auxiliary lane in each direction   |  |
| Tukwila &<br>Renton                    | R.TC-9                      | One additional GP lanes in each direction -<br>SR 5 Tukwila to SR 167  | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. Springbrook Creek is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
| Renton                                 | R.TC-10                     | One additional GP lanes in each direction -<br>SR 167 to SR 900/North Renton<br>Interchange  | Springbrook Creek and the Cedar River are designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |
| Renton<br>Newcastle<br>Bellevue        | R.TC-11                     | One additional GP lanes in each direction -<br>SR 900/North Renton Interchange to SR 90  | May Creek is designated Urban on the west side of I-405 and Conservancy on the east side. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190. Newcastle has no shorelines along I-405. Mercer Slough shoreline is approximately 450 feet wide where it is crossed by I-90. This is designated as a Shoreline Overlay District and not given any particular shoreline environment designation. The city will require a substantial development permit pursuant to Part 20.30R LUC. |
| Kirkland<br>KC<br>Bothell              | R.TC-15                     | One additional GP lanes in each direction -<br>NE 124th SR 522   | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. Kirkland does not have any designated shorelines along I-405.  |
| Bothell<br>Snohomish<br>County         | R.TC-16                     | One additional GP lanes in each direction -<br>SR 522 to SR 5 Swamp Creek  | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |

| Jurisdiction            |   | Actions   | Shoreline Analysis  |
|-------------------------|---|---|---|
| Element #16.            | Connecting  | freeway Capacity (Matched to fit I-405 Imp  | rovements)  |
| Bothell,<br>Woodinville | R.CF.5  | SR 522 Bothell to NE 195th  | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. Bear Creek and its associated floodplain (which extends the shoreline jurisdictional area) runs adjacent to this corridor project. The exact extent of this project's design is not known at this time. It is impossible to quantify any potential losses and impacts. The shoreline environment designation in this area is Urban and Conservancy. Bear Creek is only designated a shoreline of the state up to the 12300 Block of Woodinville-Sammamish Highway. The city would require a shoreline conditional use permit and a shoreline substantial development permit subject to the requirements of their shoreline regulations, section 4.20.2. |
| Element #17.            | Planned Arte  | erial Projects  |   |
| Bothell                 | R.PA-3  | SR 522 Multimodal Corridor Project<br>Widen SR-522 mostly within existing ROW<br>to provide transit lanes, safety<br>improvements, consolidated driveways &<br>left turn lanes; and sidewalks. (ETP R-107)  | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.   |
| King County             | R.PA-10   | NE 132 St Extension (132 Ave NE to Willows Rd Ext.) Construct new 3 lane arterial with CGS, bike lanes (ETP 61)   | Sammamish River is designated Conservancy. This project would be permitted subject to the regulatory requirements found in KCC 25.32.   |
| Kenmore/K<br>CDOT       | R.PA-11 &<br>R.HOV.53                                   | 68 Ave NE (Simonds Rd to SR 522)<br>Construct NB HOV lane total of 5/6 lanes<br>(ETP 22)  | Sammamish River (Urban and Conservancy) crossed where shoreline zone is approximately 450 feet wide. The city has adopted Title 25 from King County Code. Permitting issues would be similar.   |
| Woodinville             | R.PA-25 &<br>R.AC.30<br>R.PA-26<br>R.PA-28 &<br>R.AC-17 | R.PA-25 & R.AC.30: SR 522 Interchange Package(SR 522/SR 202 &SR522/195th St) Access improvements and new freeway ramps (ETP R-53) (See R.AC-30) R.PA-26: SR202 Corridor Package (SR202/148th Ave & SR202/127th Place) Intersection improvements (ETP R-54) R.PA-28 & R.AC-17: SR 202 / 140 Place NE (NE 124 St to NE 175 St) Widen 4/5 lanes (ETP R-43) (See R.AC-17, 18) | R.PA-25 & R.AC.30: Sammamish River R.PA-26: Sammamish River R.PA-28 & R.AC-17: Sammamish River The Sammamish river is designated Urban and Conservancy. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |

| Jurisdiction |  | Actions   | Shoreline Analysis  |
|--------------|--|---|---|
| Redmond      | R.PA-17<br>R.PA-18<br>R.PA-27                    | R.PA-17: Bear Creek Pkwy Construct<br>new 162nd Ave NE arterial and new 72nd St<br>arterial w/ bike/ped and CSG; widen Bear<br>Creek Pkwy (ETP R-110)<br>R.PA-18: Union Hill Rd (Avondale Rd to<br>196 Ave NE) Widen to 4/5 lanes with<br>bike facilities (ETP R-27)<br>R.PA-27: SR 520/SR 202 Interchange<br>Complete interchange by constructing a new<br>ramp and thru lane on 202 to SR 520 (ETP<br>R-29) | R.PA-17: Bear Creek R.PA-18: Bear Creek R.PA-27: Sammamish River and Bear Creek Bear Creek (Urban and Conservancy) is adjacent and is crossed where the shoreline is 500 feet wide. Sammamish River is designated as Urban and Rural. The project may be adjacent to the floodplain of the river. This would trigger the shoreline permit requirement.  These projects would be permitted subject to the regulatory requirements found in RMC 20D.150.10-160. |
| Element #19  | . Arterial Inte                                  | rchange Improvements (Matched to I-405 In   | nprovements)  |
| Tukwila      | R.IC-3 &<br>R.AC-36                              | SR 181 West Valley Highway/ Interurban  | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required.   |
| Renton       | R.IC-4 +<br>R.HOV-43                             | SR 169 Maple Valley Hwy SR 900 to NE 5th  | The Cedar River is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |
| Bothell      | R.IC-11  | SR 527-228th to SR 524  | North Creek is designated Urban. According to Bothell's master program, the project would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Element #21  | . Pedestrian a                                   | and Bicycle Facilities (P&B) I-405 Crossings  |   |
| Bothell      | NM.CR-2<br>NM. CR-7                              | NM.CR-2: Fitzgerald Rd/27th Ave crossing I-405 from 228th St. SE to 240th St. SE - Add ped/bike facility NM. CR-7: Connection between Sammamish River Trail and North Creek Trail between SR 522 and NE 195th Street  | Discussed under Alternative 1 -Table 5.2  |
|              |  | nd Bicycle Facilities (P&B) - Pedestrian/Bi   |   |
| Renton       | NM.P&B-<br>14;<br>NM.P&B-<br>15<br>NM.P&B-<br>16 | NM.P&B-14: Cedar River Trail S. Extension – I-405 to Burnett Avenue – Add pedestrian/bike facilities NM.P&B-15: Cedar River Trail/Lake Washington Blvd Connector - Cedar River Trail to Lk Wash Blvd Loop - Add ped/bike facilities NM.P&B-16: Cedar-Duwamish Trail Connection - I-405 to Interurban Ave. S Add ped/bike facilities   | Discussed under Alternative 1 -Table 5.2  |

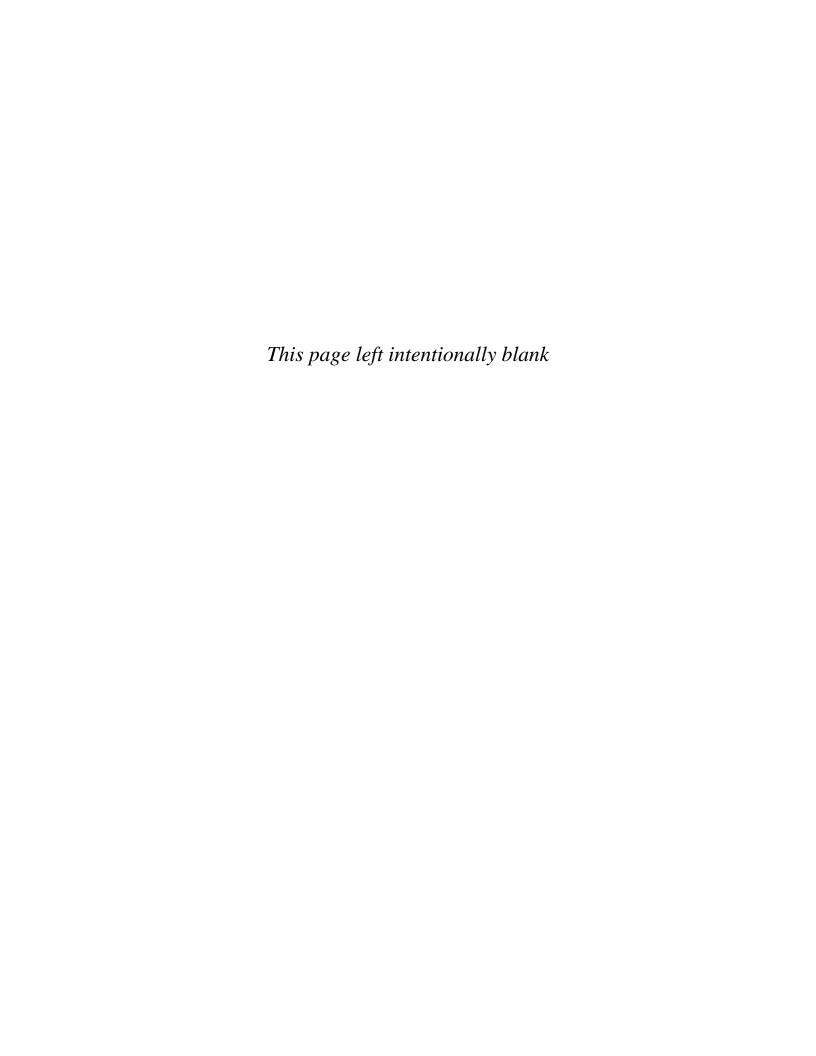
| Jurisdiction |         | Actions                                      | Shoreline Analysis                       |
|--------------|---------|--|--|
| Bothell      | NM.P&B- | North Creek Trail Link – 240th to 232nd, add | Discussed under Alternative 1 -Table 5.2 |
|              | 5       | pedestrian/bike trail.                       |  |
| Tukwila      | NM.P&B- | SR-181/W. Valley Hwy - crossing I-405        | Discussed under Alternative 1 -Table 5.2 |
|              | 19      | from Strander Blvd to Fort Dent Way - Add    |  |
|              |         | bike lanes                                   |  |

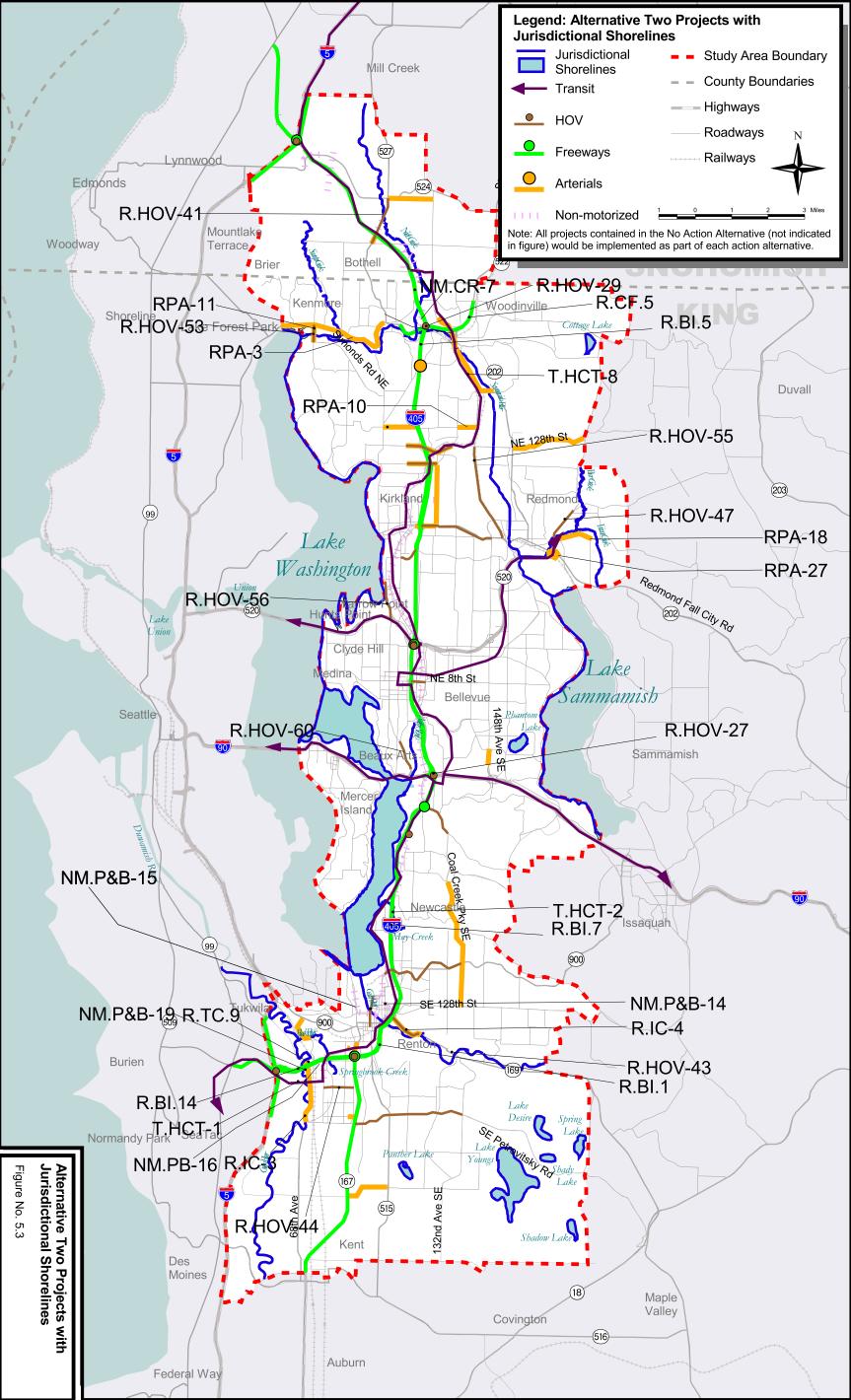
#### **Typical Shoreline Environmental Impacts:**

- Increased impervious surfaces creating additional stormwater runoff as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Increased sedimentation as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Habitat loss as discussed in the *I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report* (DEA, 2001)

#### **Typical Shoreline Environment Mitigation Measures:**

- Adherence to regulatory requirements as listed in the individual jurisdiction's shoreline and sensitive areas regulations would provide proper mitigation to offset or avoid impacts to the shoreline environment.
- Compensate for lost floodplain capacity (see I-405 Corridor Program Draft Floodplain Expertise Report [DEA, 2001])
- Provide habitat restoration/enhancement (see *I-405 Corridor Program Draft Fish Aquatic Habitat Expertise Report* [DEA, 2001])
- Land acquisition for shoreline preservation or increased public access improvements





#### 5.4 Alternative 3: Mixed Mode

Alternative 3 includes 169 projects ranging from basic improvements to I-405 and the addition of two general purpose lanes on I-405 to high-capacity transit and a number of arterial projects. Fifty-five of the Alternative 3 projects either enter or cross jurisdictional shorelines. Eleven different jurisdictional shorelines, identified in Table 5.4, are either crossed or entered by the projects proposed in Alternative 3. Figure 5.4 shows the location of Alternative 3 projects with respect to jurisdictional shorelines in the study area. The projects listed in the No Action Alternative are included in this Alternative but have already been discussed and are in addition to the totals discussed above.

#### 5.4.1 Construction Impacts

No substantial impacts to the shoreline are anticipated during construction. Avoidance of the shoreline environment (if possible) should be the main concern during project design. However, potential impacts to the shoreline environment include filling, armoring, and disrupting existing public access points. The filling and armoring could result in a loss of near shore environment that is important to juvenile salmonids making their way from a riverine environment to an esturine environment. Impacts to the near shore environment are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001) and will not be repeated here. Filling and armoring within the shoreline environment also may result in a loss of the floodways' and floodplains' capacity to absorb floodwaters in a non-disturbed shoreline environment. Within areas that have already been urbanized or disrupted by prior construction activities, in many instances filling and armoring of the shoreline banks may have already occurred. Impacts from new projects that may require increased filling or armoring may not be as substantial an impact (due to previous losses) when compared to the non-disturbed shoreline environment. This is not to say that additional losses are insignificant. Under today's regulatory requirement, enhancement or replacement are required to meet today's regulations. Meeting the regulatory requirements will mean that additional impacts will be avoided, minimized and mitigated. These issues are addressed in the I-405 Corridor Program Draft Floodplain (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), Surface Water Resources (CH2M HILL, 2001), and Wetlands (DEA, 2001) Expertise Reports and will not be addressed in detail here. Potential disruption from construction activities may cause temporary disruption at public shoreline access opportunities (i.e. Sammamish River Trail). This impact will only last during construction. Detours around the construction activity can provide relief and improvements for public access may result as part of the construction project

#### 5.4.2 Operational Impacts

Operational impacts of the transportation system should not have substantial adverse environmental impacts to shorelines of the state or state-wide significance. Impacts to the near shore environment are addressed within the I-405 Corridor Program Draft Fish and Aquatic Habitat and Floodplains Expertise Reports (DEA, 2001) and will not be repeated here. However, without the avoidance measures discussed at the introduction to this section, public access and habitat enhancement to jurisdictional shorelines could be restricted. Additionally, habitat could be impacted through alteration or removal so that both fish and wildlife would be affected. Because avoidance measures can readily be incorporated into project design, it is assumed that there would be no substantial impacts to jurisdictional shorelines.

Table 5.4: Shorelines Potentially Impacted by Alternative 3

| Jurisdiction           |   | Actions   | Shoreline Analysis                        |  |  |
|------------------------|---|---|---|--|--|
| Element #4.            | High-Capacit                                  | y Transit   |   |  |  |
| Tukwila &<br>Renton    | T.HCT-1                                       | HCT - SeaTac to Renton CBD  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Renton                 | T.HCT-2                                       | HCT-Renton CBD to NE 44th (Port Quendall)   | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bellevue &<br>Issaquah | T.HCT-4                                       | HCT – Factoria to Issaquah  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bellevue &<br>Redmond  | T.HCT-6                                       | HCT - Bellevue to Redmond   | Discussed under Alternative 1 - Table 5.2 |  |  |
| Kirkland &<br>King Co  | T.HCT-8                                       | HCT - Totem Lake to Bothell   | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bothell                | T.HCT-9                                       | HCT - Bothell to Lynnwood   | Discussed under Alternative 1 - Table 5.2 |  |  |
| Element #6.            | Arterial HOV                                  |   |   |  |  |
| Bothell                | HOV-41  | Construct NB HOV lane.<br>SR 527 from SE 228 <sup>th</sup> Street to SR 524   | Discussed under Alternative 1 - Table 5.2 |  |  |
| Renton                 | R.HOV-43<br>R.IC-4<br>R.HOV-44                | R.HOV-43 & R.IC-4: SR 169 from SR 405 to<br>Riverview Park Vicinity - HOV/Transit Preferential<br>treatment.<br>R.HOV-44: SW 27th Street Corridor in Renton from<br>Oaksdale Avenue to SR 167 | Discussed under Alternative 1 - Table 5.2 |  |  |
| Redmond                | R.HOV-47<br>R.HOV-55                          | R.HOV-47: Avondale Road from Novelty Hill Road to Avondale Way/Construct SB HOV lane R.HOV-55: Willows Rd (Redmond Way to NE 124 St)  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Kenmore                | HOV-53<br>R.PA.11                             | 68th Avenue NE (Simonds Road to SR 522) (Both project numbers)  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Kirkland,<br>Bellevue  | R.HOV-56                                      | Lake Washington Blvd (SR 520 to Yarrow Bay) -<br>HOV lanes  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bellevue               | R.HOV-60                                      | Bellevue Way - I-90 to South Bellevue Park-and-Ride Vicinity  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Element #7.            | HOV Intercha                                  | nge Ramps (Direct Access)   |   |  |  |
| Bellevue               | R.HOV-27                                      | SR 90 Interchange Fwy to Fwy HOV ramps,   | Discussed under Alternative 2 - Table 5.3 |  |  |
| Bothell                | R.HOV-29                                      | SR 522 Fwy to Fwy HOV Ramps   | Discussed under Alternative 2 - Table 5.3 |  |  |
| Element #10.           | Element #10. Basic I-405 Improvement Projects |   |   |  |  |

| Jurisdiction                           |                             | Actions   | Shoreline Analysis  |
|--|-----------------------------|---|---|
| Renton                                 | R.Bl.1<br>R.B1.7<br>R.Bl.14 | R.Bl.1: SR 167 Interchange – Direct Connection with auxiliary lane SB SR 169 to SR 167 R.Bl.7: Kennydale Hill climbing lane: SR 900 to 44 <sup>th</sup> NB 900 to 30 <sup>th</sup> , SB 44 <sup>th</sup> – 30 <sup>th</sup> R.Bl.14: NB Auxilliary Lane I-5 to SR 167 | Discussed under Alternative 1 - Table 5.2   |
| Bothell, King<br>County, &<br>Kirkland | R.BI.5                      | SB SR 522 to 124th continue climbing lane as an auxiliary lane  | Discussed under Alternative 1 - Table 5.2   |
| Bothell                                | R.BI.6                      | NB auxiliary lane SR 522 to SR 527  | Discussed under Alternative 1 - Table 5.2   |
| Bellevue                               | R.Bl.8                      | I-90 to Bellevue SB HOV direct connection to I-90 west  | Discussed under Alternative 1 - Table 5.2   |
| Element #11.                           |                             | onal GP lanes in each direction   |   |
| Tukwila &<br>Renton                    | R.TC-1                      | Two additional GP lanes in each direction - SR 5<br>Tukwila to SR 167   | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. Springbrook Creek is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190. |
| Renton                                 | R.TC-2<br>R.TC-3            | R.TC-2: Two additional GP lanes in each direction - R.TC-3: SR 167 to SR 900/North Renton Interchange Two additional GP lanes in each direction - SR 900/North Renton Interchange to SR 90  | R.TC-2: Springbrook Creek, Cedar River.  R.TC-3: May Creek  Springbrook Creek, May Creek and Cedar River are designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |
| Kirkland,<br>King County<br>& Bothell  | R.TC-7                      | Two additional GP lanes in each direction - NE 124th to SR 522  | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.   |
| Bothell &<br>Snohomish<br>County       | R.TC-8                      | Two additional GP lanes in each direction - SR 522 to SR 5 Swamp Creek  | The Sammamish river is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.   |
| Element #12.                           | Collector D                 | istributors (CD) Matched to fir I-405 Improvements  |   |
| Renton                                 | R.CD-1                      | SR-167, SR-169, Sunset and SR 900/North Renton;   | Springbrook Creek, My Creek and Cedar River are designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
| Bellevue                               | R.CD-2                      | Coal Creek, SR 90, SE 8th, NE 4th, NE 8th and SR 520;   | Mercer Slough shoreline is approximately 450 feet wide where it is crossed by I-90. This is designated as a Shoreline Overlay District and not given any particular shoreline environment designation. The city will require a substantial development permit pursuant to Part 20.30R LUC.  |

| Jurisdiction            |   | Actions  | Shoreline Analysis  |
|-------------------------|---|--|---|
| Bothell, King<br>County | R.CD-5  | NE 160th, SR-522 and SR 527  | The Sammamish river is designated Urban and Rural. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. |
| Element #16.            |   | Freeway Capacity (Matched to I-405 Improvements)   |   |
| Bothell,<br>Woodinville | R.CF.5  | SR 522 Bothell to NE 195th   | Discussed under Alternative 2 - Table 5.3   |
| Element #17.            | Planned Arte  | rial Projects  |   |
| Bothell                 | R.PA-3  | SR 522 Multimodal Corridor Project Widen SR-522 mostly within existing ROW to provide transit lanes, safety improvements, consolidated driveways & left turn lanes; and sidewalks. (ETP R-107)   | Discussed under Alternative 2 - Table 5.3   |
| King County             | R.PA-10   | NE 132 St Extension (132 Ave NE to Willows Rd Ext.) Construct new 3 lane arterial with CGS, bike lanes (ETP 61)  | Discussed under Alternative 2 - Table 5.3   |
| Redmond                 | R.PA-17<br>R.PA-18<br>R.PA-27                           | R.PA-17: Bear Creek Pkwy Construct new 162nd Ave NE arterial and new 72nd St arterial w/bike/ped and CSG; widen Bear Creek Pkwy (ETP R-110) R.PA-18: Union Hill Rd (Avondale Rd to 196 Ave NE) Widen to 4/5 lanes with bike facilities (ETP R-27) R.PA-27: SR 520/SR 202 Interchange Complete interchange by constructing a new ramp and thru lane on 202 to SR 520 (ETP R-29) | Discussed under Alternative 2 - Table 5.3   |
| Kenmore/K<br>CDOT       | R.PA-11 &<br>R.HOV.53                                   | 68 Ave NE (Simonds Rd to SR 522) Construct<br>NB HOV lane total of 5/6 lanes (ETP 22)  | Discussed under Alternative 2 - Table 5.3   |
| Woodinville             | R.PA-25 &<br>R.AC.30<br>R.PA-26<br>R.PA-28 &<br>R.AC-17 | R.PA-25 & R.AC.30: SR 522 Interchange Package(SR 522/SR 202 &SR522/195th St) Access improvements and new freeway ramps (ETP R-53) (See R.AC-30) R.PA-26: SR202 Corridor Package (SR202/148th Ave & SR202/127th Place) Intersection improvements (ETP R-54) R.PA-28 & R.AC-17: SR 202 / 140 Place NE (NE 124 St to NE 175 St) Widen 4/5 lanes (ETP R-43) (See R.AC-17, 18)      | Discussed under Alternative 2 - Table 5.3   |
|                         |   | ncity (AC) Actions   |   |
| King Co,<br>Renton      | R.AC-3  | 138th Ave SE - Construct roadway link to 4/5 lanes-<br>SR 169 to NE 4th St   | Cedar River is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.   |

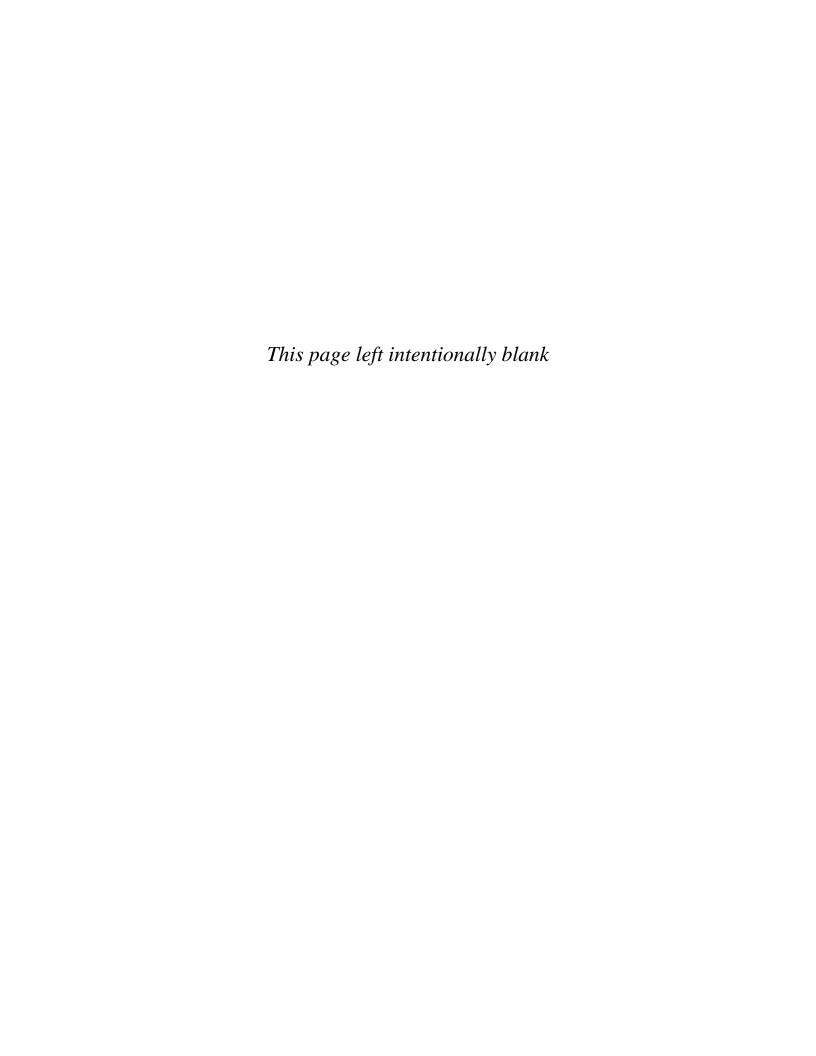
| Jurisdiction             |  | Actions   | Shoreline Analysis  |
|--------------------------|--|---|---|
| King County,             | R.AC-16  | Willows Rd- NE 124th St to NE 145th St- construct   | The Sammamish river is designated Urban and Conservancy. According to their master  |
| Woodinville              |  | new facility -4/5 lanes   | program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Woodinville              | R.AC-17 &<br>R.PA-28                             | SR 202- NE 145th St to SR 522- widen to 5 lanes   | The Sammamish River and Bear Creek are designated Urban and Conservancy. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3. |
| Bothell &<br>Woodinville | R.AC-30 &<br>R.PA.25                             | SR 202 connection across SR 522 to 120th  | The Bear Creek is designated Urban and Conservancy. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.                      |
| Element #19.             | <b>Arterial Intere</b>                           | change Improvements (Matched to fit I-405 Improve   | ements)   |
| Tukwila                  | R.IC-3 &<br>R.AC-36                              | SR 181 West Valley Highway/ Interurban  | Discussed under Alternative 2 - Table 5.3   |
| Renton                   | R.IC-4   | SR 169 Maple Valley Hwy SR 900 to NE 5th  | Discussed under Alternative 2 - Table 5.3   |
| Bothell                  | R.IC-11  | <b>R.IC-11:</b> SR 527-228th to SR 524  | <b>R.IC-11:</b> Discussed under Alternative 2 - Table 5.3   |
|                          | R.IC-21  | <b>R.IC-21:</b> New SR 405 Interchange at 240th Street SE(Bothell)  | <b>R.IC-21:</b> North Creek is designated Urban. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.                         |
| Element #21.             |  | nd Bicycle Facilities (P&B) I-405 Crossings   |   |
| Bothell                  | NM.CR-2<br>NM. CR-7                              | NM.CR-2: Fitzgerald Rd/27th Ave crossing I-405 from 228th St. SE to 240th St. SE - Add ped/bike facility NM. CR-7: Connection between Sammamish River Trail and North Creek Trail between SR 522 and NE 195 <sup>th</sup> Street  | Discussed under Alternative 1 -Table 5.2  |
| Element #21.             | Pedestrian an                                    | d Bicycle Facilities (P&B) - Pedestrian/Bicycle Co  | nnections   |
| Renton                   | NM.P&B-<br>14;<br>NM.P&B-<br>15<br>NM.P&B-<br>16 | NM.P&B-14: Cedar River Trail S. Extension – I-405 to Burnett Avenue – Add pedestrian/bike facilities NM.P&B-15: Cedar River Trail/Lake Washington Blvd Connector - Cedar River Trail to Lk Wash Blvd Loop - Add ped/bike facilities NM.P&B-16: Cedar-Duwamish Trail Connection - I-405 to Interurban Ave. S Add ped/bike facilities | Discussed under Alternative 1 -Table 5.2  |
| Bothell                  | NM.P&B-5   | North Creek Trail Link – 240 <sup>th</sup> to 232 <sup>nd</sup> , add pedestrian/bike trail.  | Discussed under Alternative 1 -Table 5.2  |
| Tukwila                  | NM.P&B-<br>19                                    | SR-181/W. Valley Hwy - crossing I-405 from<br>Strander Blvd to Fort Dent Way - Add bike lanes   | Discussed under Alternative 1 -Table 5.2  |

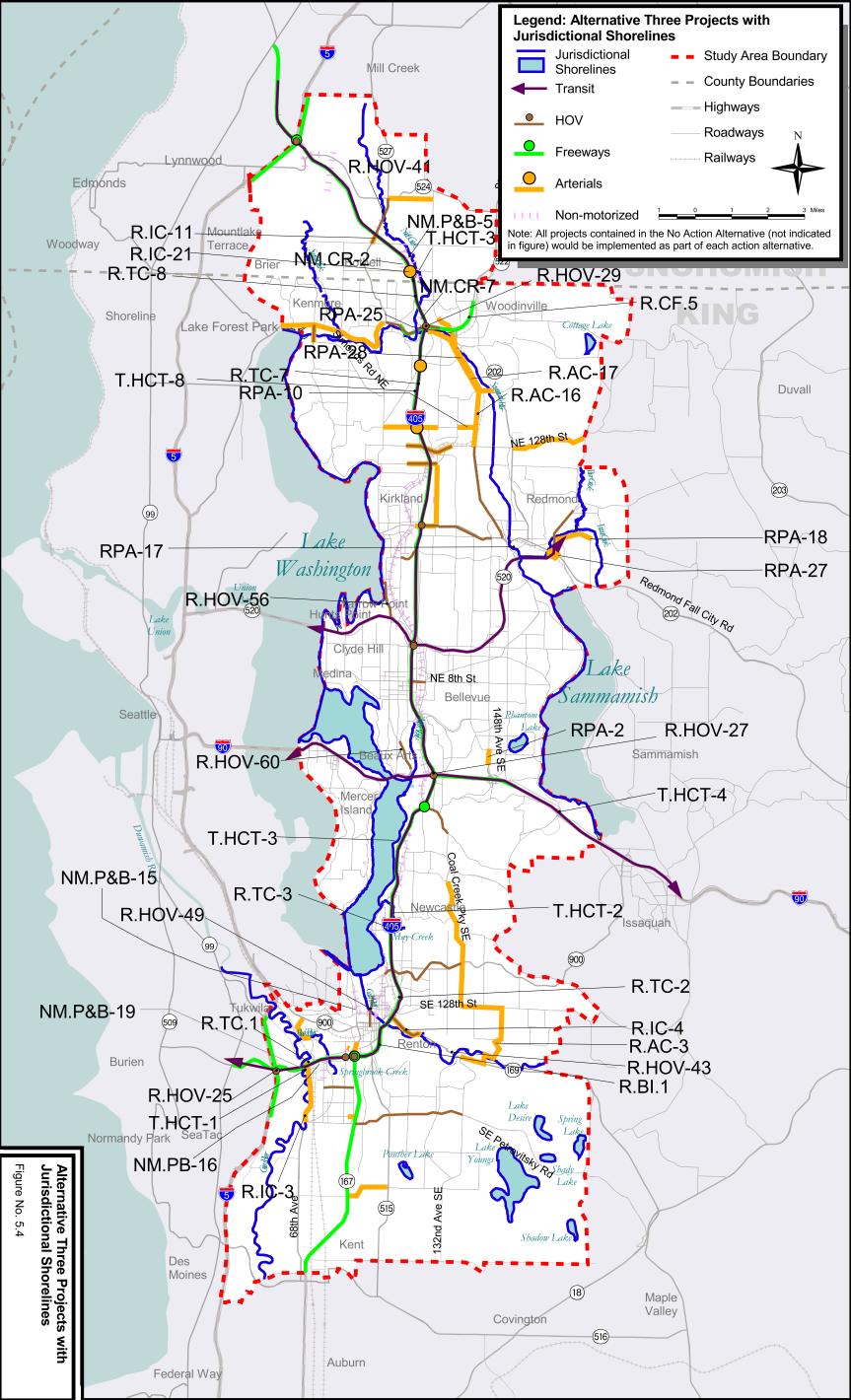
#### **Typical Shoreline Environmental Impacts:**

- Increased impervious surfaces creating additional stormwater runoff as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Increased sedimentation as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Habitat loss as discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001)

## **Typical Shoreline Environment Mitigation Measures:**

- Adherence to regulatory requirements as listed in the individual jurisdiction's shoreline and sensitive areas regulations would provide proper mitigation to offset or avoid impacts to the shoreline environment.
- Compensate for lost floodplain capacity (see I-405 Corridor Program Draft Floodplain Expertise Report [DEA, 2001])
- Provide habitat restoration/enhancement (see I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report [DEA, 2001])
- Land acquisition for shoreline preservation or increased public access improvements





# 5.5 Alternative 4: General Capacity Emphasis

Alternative 4 includes 130 projects ranging from basic improvements to I-405 and the addition of express lanes and major interchanges on I-405 to high-capacity transit and a number of arterial projects. Fifty-six of the Alternative 4 projects either enter or cross jurisdictional shorelines. Eleven different jurisdictional shorelines, identified in Table 5.5, are either crossed or entered by the projects proposed in Alternative 4. Figure 5.5 shows the location of Alternative 4 projects with respect to jurisdictional shorelines in the study area. The projects listed in the No Action Alternative are included in this Alternative but have already been discussed and are in addition to the totals discussed above.

# 5.5.1 Construction Impacts

No substantial impacts to the shoreline are anticipated during construction. Avoidance of the shoreline environment (if possible) should be the main concern during project design. However, potential impacts to the shoreline environment include filling, armoring, and disrupting existing public access points. The filling and armoring could result in a loss of near shore environment that is important to juvenile salmonids making their way from a riverine environment to an esturine environment. Impacts to the near shore environment are discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001) and will not be repeated here. Filling and armoring within the shoreline environment also may result in a loss of the floodways' and floodplains' capacity to absorb floodwaters in a non-disturbed shoreline environment. Within areas that have already been urbanized or disrupted by prior construction activities, in many instances filling and armoring of the shoreline banks may have already occurred. Impacts from new projects that may require increased filling or armoring may not be as substantial an impact (due to previous losses) when compared to the non-disturbed shoreline environment. This is not to say that additional losses are insignificant. Under today's regulatory requirement, enhancement or replacement are required to meet today's regulations. Meeting the regulatory requirements will mean that additional impacts will be avoided, minimized and mitigated. These issues are addressed in the I-405 Corridor Program Draft Floodplains (DEA, 2001), Fish and Aquatic Habitat (DEA, 2001), Surface Water Resources (CH2M HILL, 2001), and Wetlands (DEA, 2001) Expertise Reports and will not be addressed in detail here. Potential disruption from construction activities may cause temporary disruption at public shoreline access opportunities (i.e. Sammamish River Trail). This impact will only last during construction. Detours around the construction activity can provide relief and improvements for public access may result as part of the construction project.

#### 5.5.2 Operational Impacts

Operational impacts of the transportation system should not have substantial adverse environmental impacts to shorelines of the state or state-wide significance. Impacts to the near shore environment are addressed within the I-405 Corridor Program Draft Fish and Aquatic Habitat and Floodplain Expertise Reports (DEA, 2001) and will not be repeated here. However, without the avoidance measures discussed at the introduction to this section, public access and habitat enhancement to jurisdictional shorelines could be restricted. Additionally, habitat could be impacted through alteration or removal so that both fish and wildlife would be affected. Because avoidance measures can readily be incorporated into project design, it is assumed that there would be no substantial impacts to jurisdictional shorelines.

Table 5.5: Shorelines Potentially Impacted by Alternative 4

| Jurisdiction                              |   | Actions   | Shoreline Analysis                        |  |  |
|---|---|---|---|--|--|
| Element #7.                               | Element #7. HOV Interchange Ramps (Direct Access) |   |   |  |  |
| Bellevue                                  | R.HOV-27  | SR 90 Interchange Fwy to Fwy HOV ramps,   | Discussed under Alternative 2 - Table 5.3 |  |  |
| Bothell                                   | R.HOV-29  | SR 522 Fwy to Fwy HOV Ramps   | Discussed under Alternative 2 - Table 5.3 |  |  |
| Element #10                               | Basic I-405                                       | Improvement Projects  |   |  |  |
| Renton                                    | R.Bl.1<br>R.B1.7<br>R.Bl.14                       | R.Bl.1: SR 167 Interchange – Direct<br>Connection with auxiliary lane SB SR<br>169 to SR 167<br>R.Bl.7: Kennydale Hill climbing lane:<br>SR 900 to 44 <sup>th</sup> NB 900 to 30 <sup>th</sup> , SB 44 <sup>th</sup><br>– 30 <sup>th</sup><br>R.Bl.14: NB Auxiliary Lane I-5 to SR<br>167 | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bothell,<br>King<br>County, &<br>Kirkland | R.BI.5  | SB SR 522 to 124th continue climbing lane as an auxiliary lane  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bothell                                   | R.BI.6  | NB auxiliary lane SR 522 to SR 527  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Bellevue                                  | R.Bl.8  | I-90 to Bellevue SB HOV direct connection to I-90 west  | Discussed under Alternative 1 - Table 5.2 |  |  |
| Element #10                               | A. One additi                                     | ional GP or Auxiliary lane in each dire   | ction                                     |  |  |
| Tukwila &<br>Renton                       | R.TC-9  | One additional GP lanes in each direction - SR 5 Tukwila to SR 167  | Discussed under Alternative 2 - Table 5.3 |  |  |
| Renton                                    | R.TC-10   | One additional GP lanes in each<br>direction - SR 167 to SR 900/North<br>Renton Interchange   | Discussed under Alternative 2 - Table 5.3 |  |  |
| Renton<br>Newcastle<br>Bellevue           | R.TC-11   | One additional GP lanes in each<br>direction - SR 900/North Renton<br>Interchange to SR 90  | Discussed under Alternative 2 - Table 5.3 |  |  |
| Kirkland<br>KC<br>Bothell                 | R.TC-15   | One additional GP lanes in each<br>direction - NE 124th SR 522  | Discussed under Alternative 2 - Table 5.3 |  |  |
| Bothell<br>Snohomish<br>County            | R.TC-16   | One additional GP lanes in each<br>direction - SR 522 to SR 5 Swamp<br>Creek  | Discussed under Alternative 2 - Table 5.3 |  |  |
| Element #12.                              | . Collector Di                                    | istributors (CD)Matched to fit I-405 In   | provements                                |  |  |

| Jurisdiction                          |         | Actions  | Shoreline Analysis   |
|---------------------------------------|---------|--|--|
| Renton                                | R.CD-1  | SR-167, SR-169, Sunset and SR                                  | Discussed under Alternative 3 - Table 5.4  |
| Tomon                                 | 10.02   | 900/North Renton;  | Discussed under Attendance of Table 5.4  |
| Bellevue                              | R.CD-2  | Coal Creek, SR 90, SE 8th, NE 4th,                             | Discussed under Alternative 3 - Table 5.4  |
|                                       |         | NE 8th and SR 520;   |  |
| Bothell,                              | R.CD-5  | NE 160th, SR-522 and SR 527                                    | Discussed under Alternative 3 - Table 5.4  |
| King                                  |         |  |  |
| County                                |         |  |  |
|                                       |         | nes - 2 lanes each direction between m                         |  |
| Tukwila<br>Renton                     | R.TC-20 | Add Express lanes - SR 5 Tukwila to SR 167                     | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. Springbrook Creek is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
| Renton                                | R.TC-21 | Add Express lanes - SR 167 to SR 900<br>North Renton           | Cedar River is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
| Renton<br>Newcastle<br>Bellevue       | R.TC-22 | Add Express lanes -SR 900 North<br>Renton Interchange to SR 90 | May Creek is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190. Mercer Slough shoreline is approximately 450 feet wide where it is crossed by I-90. This is designated as a Shoreline Overlay District and not given any particular shoreline environment designation. The city will require a substantial development permit pursuant to Part 20.30R LUC. |
| Kirkland<br>King<br>County<br>Bothell | R.TC-26 | Add Express lanes - NE 124th to SR 522                         | The Sammamish river is designated Urban and Rural. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
| Bothell<br>Snohomish<br>County        | R.TC-27 | Add Express lanes - SR 522 to Vicinity of Damson Rd            | The Sammamish river is designated Urban and Rural. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.  |
|                                       |         | es - Access Locations  |  |
| Tukwila &<br>Renton                   | R.TC-29 | Southern end to Express lanes -<br>Between SR 181 and SR 167   | Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. Springbrook Creek is designated Urban. A substantial development permit would required subject to the general regulations found in 4-3-090(K), the specific use regulations - 4-3-090(L) and the procedural requirements - 4-9-190.  |
|                                       |         | Freeway Capacity (Matched to fit I-40                          | 5 Improvements)  |
| Bothell,<br>Woodinville               | R.CF.5  | SR 522 Bothell to NE 195th                                     | Discussed under Alternative 2 - Table 5.3  |

| Jurisdiction              |   | Actions   | Shoreline Analysis                        |
|---------------------------|---|---|---|
| Element #17.              | Planned Art   | terial Projects   | •   |
| Bothell                   | R.PA-3  | SR 522 Multimodal Corridor Project<br>Widen SR-522 mostly within existing<br>ROW to provide transit lanes, safety<br>improvements, consolidated driveways<br>& left turn lanes; and sidewalks. (ETP<br>R-107)   | Discussed under Alternative 2 - Table 5.3 |
| King<br>County            | R.PA-10   | NE 132 St Extension (132 Ave NE to Willows Rd Ext.) Construct new 3 lane arterial with CGS, bike lanes (ETP 61)   | Discussed under Alternative 2 - Table 5.3 |
| Redmond                   | R.PA-17<br>R.PA-18<br>R.PA-27                           | R.PA-17: Bear Creek Pkwy Construct new 162nd Ave NE arterial and new 72nd St arterial w/ bike/ped and CSG; widen Bear Creek Pkwy (ETP R-110) R.PA-18: Union Hill Rd (Avondale Rd to 196 Ave NE) Widen to 4/5 lanes with bike facilities (ETP R-27) R.PA-27: SR 520/SR 202 Interchange Complete interchange by constructing a new ramp and thru lane on 202 to SR 520 (ETP R-29) | Discussed under Alternative 2 - Table 5.3 |
| Kenmore<br>King<br>County | R.PA-11 &<br>R.HOV.53                                   | 68 Ave NE (Simonds Rd to SR 522)<br>Construct NB HOV lane total of 5/6<br>lanes (ETP 22)  | Discussed under Alternative 2 - Table 5.3 |
| Woodinville               | R.PA-25 &<br>R.AC.30<br>R.PA-26<br>R.PA-28 &<br>R.AC-17 | R.PA-25 & R.AC.30: SR 522 Interchange Package(SR 522/SR 202 &SR522/195th St) Access improvements and new freeway ramps (ETP R-53) (See R.AC-30) R.PA-26: SR202 Corridor Package (SR202/148th Ave & SR202/127th Place) Intersection improvements (ETP R-54) R.PA-28 & R.AC-17: SR 202 / 140 Place NE (NE 124 St to NE 175 St) Widen 4/5 lanes (ETP R-43) (See R.AC-17, 18)       | Discussed under Alternative 2 - Table 5.3 |

| Jurisdiction                                 |                               | Actions  | Shoreline Analysis   |
|--|-------------------------------|--|--|
| Element #18.                                 | Additional (                  | Capacity (AC) Actions  |  |
| King Co,<br>Renton                           | R.AC-3                        | 138th Ave SE - Construct roadway link to 4/5 lanes- SR 169 to NE 4th St  | Discussed under Alternative 3 - Table 5.4  |
| Redmond                                      | R.AC-15 &<br>R-111            | Willows Rd- NE 90th St to NE 124th<br>St- Add 1 lane each direction  |  |
| King<br>County<br>Woodinville                | R.AC-16                       | Willows Rd- NE 124th St to NE<br>145th St- construct new facility -4/5<br>lanes                                    | Discussed under Alternative 3 - Table 5.4  |
| Woodinville                                  | R.AC-17 &<br>R.PA-28          | SR 202- NE 145th St to SR 522-<br>widen to 5 lanes   | Discussed under Alternative 3 - Table 5.4  |
| Redmond<br>King<br>County<br>Woodinville     | R.AC-18 &<br>R.PA 28          | SR 202 - NE 90th to NE 145th   | <ul> <li>R.AC-18: Sammamish River is designated as Urban and Rural. The project may be adjacent to the floodplain of the river. This would trigger the shoreline permit requirement.</li> <li>These projects would be permitted subject to the regulatory requirements found in RMC 20D.150.10-160.</li> <li>R.PA 28: Discussed under Alternative 3 - Table 5.4</li> </ul> |
| Bothell<br>Snohomish<br>County<br>Mill Creek | R.AC-20                       | SR 527/Bothell Everett Hwy - SR 522<br>to SR 524 - Widen by 1 lane each<br>direction                               | The Sammamish River and North Creek are designated Urban and Conservancy. According to their master program, the projects would be allowed as a shoreline conditional use and subject to the regulations found in section 4.22.3.2(1) and the general regulations found in section 4.22.3.3.   |
| Bothell<br>Woodinville                       | R.AC-30 &<br>R.PA.25          | SR 202 connection across SR 522 to 120th   | Discussed under Alternative 3 - Table 5.4  |
| Tukwila                                      | R.AC-35<br>R.AC-36&<br>R.IC-3 | <b>R.AC-35:</b> SR 181- S 180th to S 200 <sup>th</sup> <b>R.AC-36&amp; R.IC-3:</b> SR 181- 144th to Strander Blvd. | <b>R.AC-35:</b> Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required. <b>R.AC-36:</b> Discussed under Alternative 3 - Table 5.4  |
|  |                               |  | <b>R.IC-3:</b> Green River is designated Urban-Open Space. Chapter 18.44 - Shoreline Overlay District contains the regulations applicable to this type of project. A Shoreline Conditional use permit may be required.   |
| Element #19.                                 | Arterial Inte                 | erchange Improvements (Matched to fi   | it I-405 Improvements)   |
| Tukwila                                      | R.IC-3 &<br>R.AC-36           | SR 181 West Valley Highway/<br>Interurban  | Discussed under Alternative 2 - Table 5.3  |
| Renton                                       | R.IC-4                        | SR 169 Maple Valley Hwy SR 900 to<br>NE 5th  | Discussed under Alternative 2 - Table 5.3  |
| Bothell                                      | R.IC-11<br>R.IC-21            | R.IC-11: SR 527-228th to SR 524<br>R.IC-21: New SR 405 Interchange at<br>240th Street SE(Bothell)                  | Discussed under Alternative 3 - Table 5.4  |

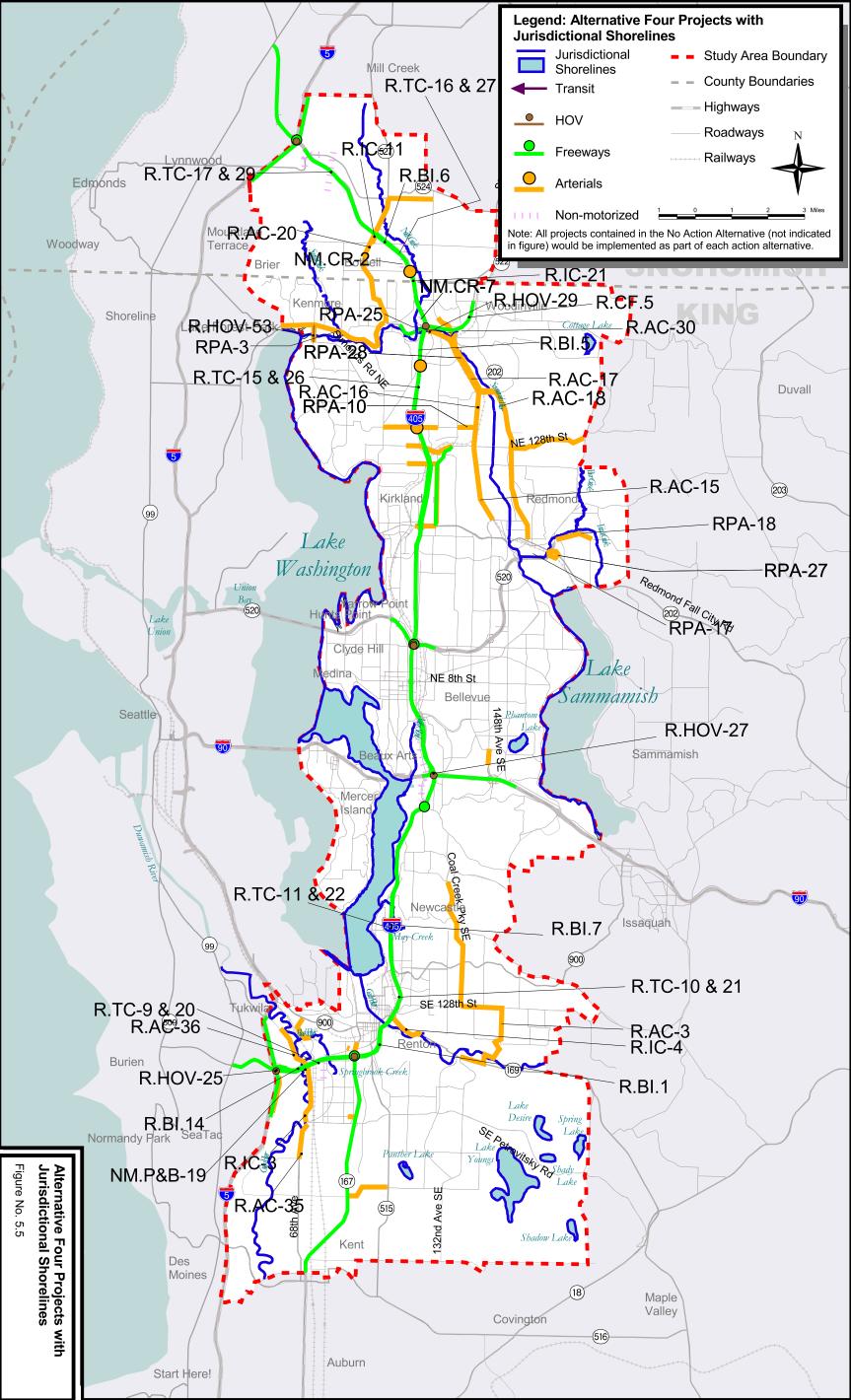
| Jurisdiction |                 | Actions                                 | Shoreline Analysis                        |
|--------------|-----------------|---|---|
| Element #2   | l. Pedestrian a | nd Bicycle Facilities (P&B) I-405 Cros  | sings                                     |
| Bothell      | NM.CR-2         | NM.CR-2: Fitzgerald Rd/27th Ave         | Discussed under Alternative 1 - Table 5.2 |
|              | NM. CR-7        | crossing I-405 from 228th St. SE to     |   |
|              |                 | 240th St. SE - Add ped/bike facility    |   |
|              |                 | NM. CR-7: Connection between            |   |
|              |                 | Sammamish River Trail and North         |   |
|              |                 | Creek Trail between SR 522 and NE       |   |
|              |                 | 195th Street                            |   |
| Element #2   | l. Pedestrian a | nd Bicycle Facilities (P&B) - Pedestria | nn/Bicycle Connections                    |
| Tukwila      | NM.P&B-         | SR-181/W. Valley Hwy - crossing I-      | Discussed under Alternative 1 - Table 5.2 |
|              | 19              | 405 from Strander Blvd to Fort Dent     |   |
|              |                 | Way - Add bike lanes                    |   |

#### **Typical Shoreline Environmental Impacts:**

- Increased impervious surfaces creating additional stormwater runoff as discussed in the *I-405 Corridor Program Draft Surface Water Resources Expertise Report* (CH2M HILL, 2001)
- Increased sedimentation as discussed in the I-405 Corridor Program Draft Surface Water Resources Expertise Report (CH2M HILL, 2001)
- Habitat loss as discussed in the I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report (DEA, 2001)

#### **Typical Shoreline Environment Mitigation Measures:**

- Adherence to regulatory requirements as listed in the individual jurisdiction's shoreline and sensitive areas regulations would provide proper mitigation to offset or avoid impacts to the shoreline environment.
- Compensate for lost floodplain capacity (see I-405 Corridor Program Draft Floodplain Expertise Report [DEA, 2001])
- Provide habitat restoration/enhancement (see I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report [DEA, 2001])
- Land acquisition for shoreline preservation or increased public access improvements



# 5.6 Secondary Impacts

Secondary impacts are reasonably foreseeable effects of an action that occur later in time or are further removed in distance from the direct effects of the proposal. Generally, these effects are induced by the initial programmatic action. Programmatic secondary impacts are expected to be limited and unlikely for the I-405 Corridor Program for several reasons:

- All of the I-405 Corridor Program action alternatives are generally compatible with existing regional and local land use plans that have already addressed growth.
- > A similar level of projected growth is expected to occur in the region, with or without the action alternatives.
- > Transportation projects, similar to I-405, are frequently built in response to population and/or employment growth.
- > The I-405 Corridor Program study area is experiencing a high rate of population growth and land development that is increasing travel demand and congestion.

Secondary effects may be more detectable during project-level environmental analysis. Therefore, the potential for secondary effects will be analyzed in the future project-level environmental analysis, documentation, and review.

# 5.7 Mitigation Measures

Mitigation and avoidance measures that could be incorporated into individual project planning and design are:

- > Realignment of roadways to keep improvements out of the shoreline.
- > Minimizing right-of-way (ROW) property acquisition within the shoreline by narrowing roadway shoulders.
- > Incorporating new public access, shoreline protection and preservation measures, and habitat enhancement to the shoreline (on arterial projects) into design when mitigation measures are necessary to address substantial adverse environmental impacts from the project.
- > Replacing culverts to aid in fish passage.
- > Where appropriate (based on project design and project-level environmental analysis, documentation, and review), elevating HCT to allow safe access to shoreline homes and parks that are only accessible by uncontrolled, at-grade rail crossings.
- > Including pedestrian and bicycle underpasses in design so that access along shorelines is maintained.
- > Including shoreline protection, preservation, and habitat enhancements in project design.
- > Modifying existing projects so that shoreline protection and preservation as well as public access along shorelines are improved.
- Using aesthetic treatments and barriers to buffer the shoreline from visual and noise effects.

# 6. COMPARISON OF ALTERNATIVES

Without impact avoidance measures, each of the alternatives could have impacts to jurisdictional shorelines. Each of the alternatives includes projects that either cross shorelines or enter the shoreline zone for some distance. Table S.2 (in the summary section) shows the projects that will require shoreline approvals in each jurisdiction.

Alternatives 3 and 4 (55 and 56, respectively) include the greatest number of projects requiring a shoreline management development approval. Alternative two has 35 shoreline related projects. All four alternatives enter at least 10 different jurisdictional shorelines in several locations. The No Action Alternative includes the least number of projects (12) requiring shoreline management approvals.

# 7. REFERENCES

Washington Administrative Code. 1998. Shoreline Management Act - Lakes Constituting Shorelines of the State.

Washington Administrative Code. 1998. Shoreline Management Act - Streams and Rivers Constituting Shorelines of the State.

King County Shoreline Master Program

**Snohomish County Shoreline Master Program** 

City of Tukwila Shoreline Master Program

City of Kent Shoreline Master Program

City of City of Renton Shoreline Master Program

City of Newcastle Shoreline Master Program

City of Bellevue Shoreline Master Program

City of Kirkland Shoreline Master Program

City of Redmond Shoreline Master Program

City of Woodinville Shoreline Master Program

City of Bothell Shoreline Master Program

City of Kenmore Shoreline Master Program

#### Other Technical Expertise Reports related to the EIS

CH2M HILL. Revised August 2001. *I-405 Corridor Program Draft Cultural Resources Expertise Report.* 

CH2M HILL. Revised August 2001. I-405 Corridor Program Draft Economics Expertise Report.

CH2M HILL. Revised August 2001. *I-405 Corridor Program Draft Environmental Justice Expertise Report.* 

CH2M HILL. Revised August 2001. I-405 Corridor Program Draft Geology and Soils Expertise Report.

CH2M HILL. Revised August 2001. *I-405 Corridor Program Draft Groundwater Resources Expertise Report.* 

CH2M HILL. Revised August 2001. *I-405 Corridor Program Draft Hazardous Materials and Wastes Technical Memorandum.* 

CH2M HILL. Revised August 2001. I-405 Corridor Program Draft Social Expertise Report.

- CH2M HILL. Revised August 2001. *I-405 Corridor Program Draft Surface Water Resources Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Farmland Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. I-405 Corridor Program Draft Fish and Aquatic Habitat Expertise Report.
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Floodplain Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Land Use Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Land Use Plans and Policies Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Public Services Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Recreation Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Right-of-Way and Displacements Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Upland Vegetation, Habitat, and Wildlife Expertise Report.*
- David Evans and Associates, Inc. Revised August 2001. I-405 Corridor Program Draft Visual Resources Expertise Report.
- David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Wetlands Expertise Report.*
- HNTB Corporation, Inc. Revised August 2001. *I-405 Corridor Program Draft Utilities Expertise Report.*
- Mirai Associates and David Evans and Associates, Inc. Revised August 2001. *I-405 Corridor Program Draft Transportation Expertise Report.*
- Parsons Brinckerhoff. Revised August 2001. *I-405 Corridor Program Draft Air Quality Expertise Report.*
- Parsons Brinckerhoff. Revised August 2001. I-405 Corridor Program Draft Energy Technical Memorandum.
- Parsons Brinckerhoff. Revised August 2001. I-405 Corridor Program Draft Noise Expertise Report.

## GLOSSARY

"Associated wetlands" - wetlands which are in proximity to and either influence or are influenced by tidal waters or a land or stream subject to the Shoreline Management Act.

"Lakes of state-wide significance" - those lakes, whether natural, artificial, or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary highwater mark.

"Streams which constitute shorelines" - (Western Washington) streams from the point at which the stream reaches a mean annual flow of twenty cubic feet per second down to the mouth of said stream or river (provided that the stream falls at said point within the jurisdiction of chapter 90.58 RCW).

"Shorelands" - lands which extend landward two hundred feet as measured on a horizontal plane from the ordinary high water mark.

"Flood fringe" - In FEMA it is that portion of the floodplain outside the floodway that is inundated by flood waters in which encroachment is permissible. In King County it is the area outside the zero-rise floodway that is covered by flood waters during the 100-year flood. It is the area generally associated with standing water, rather than rapidly flowing water.

"Floodplains" - lowlands that are relatively flat that are subject to flooding in any given year.

"FEMA Floodway" - the channel of a river or other watercourse and the adjacent land areas that must be unconfined or unobstructed either vertically or horizontally to provide for the discharge of the base year flood (usually 100-year).

"100-year flood" - the flood having a one percent chance of being equaled or exceeded in magnitude in any given year. Contrary to popular belief, it is not a flood occurring once every 100 years.

"100-year floodplain" - the area adjacent to a stream or lake which is subjected to inundation by waters having a flood probability of exceedence of one percent in any given year, as determined by standard statistical and hydrologic methods.

"Zero-rise Floodway" - the channel of a river or other watercourse and that portion of the adjoining floodplain necessary to discharge the 100-year flood flow without increasing the 100-year flood elevation by more than 0.01 feet. The boundaries of the floodplains as shown on the FIRM are considered the boundaries of the zero-rise floodway unless otherwise delineated by a special study.

"Shorelines" means all of the water areas of the state, including reservoirs, and their associated wetlands, together with the lands underlying them, except:

- (a) Shorelines of state-wide significance;
- (b) Shorelines on segments of streams upstream of a point where the mean annual flow is 20 cubic feet per second or less, and the wetlands associated with such upstream segments; and
- (c) Shorelines on lakes less than 20 acres in size and wetlands associated with such small lakes.

"Shorelines of state-wide significance" means the following shorelines of the state:

- (a) The area between the ordinary high-water mark and the western boundary of the state from Cape Disappointment on the south to Cape Flattery on the north, including harbors, bays, estuaries, and inlets;
- (b) Those areas of Puget Sound and adjacent saltwaters and the Strait of Juan de Fuca between the ordinary high-water mark and the line of extreme low tide as follows:
  - (i) Nisqually Delta from DeWolf Bight to Tatsolo Point;
  - (ii) Birch Bay from Point Whitehorn to Birch Point;
  - (iii) Hood Canal from Tala Point to Foulweather Bluff;
  - (iv) Skagit Bay and adjacent area from Brown Point to Yokeko Point; and
  - (v) Padilla Bay from March Point to William Point. (c) Those areas of Puget Sound and the Strait of Juan de Fuca and adjacent saltwaters north to the Canadian line and lying seaward from the line of extreme low tide;
- (d) Those lakes, whether natural, artificial or a combination thereof, with a surface acreage of 1,000 acres, or more, measured at the ordinary high-water mark;
- (e) Those natural rivers or segments thereof, as follows:
  - (i) Any west of the crest of the Cascade Range downstream of a point where the mean annual flow is measured at 1,000 cubic feet per second, or more;
  - (ii) Any east of the crest of the Cascade Range downstream of a point where the annual flow is measured at 200 cubic feet per second, or more, or those portions of rivers east of the crest of the Cascade Range downstream from the first 300 square miles of drainage area, whichever is longer;
- (f) Those wetlands associated with (a), (b), (d), and (e) of this subsection.

"Shorelines of the state" means the total of all "shorelines" and "shorelines of state-wide significance" within the state.

# **APPENDIX A**Major Elements of Alternatives

# Appendix A I-405 CORRIDOR PROGRAM MAJOR ELEMENTS OF ALTERNATIVES

# 1. TRANSPORTATION DEMAND MANAGEMENT

# **TDM Package Core Assumptions**

- Existing TDM programs will continue (public & private sector)
- Existing public TDM programs will be expanded to meet new market demand
- Implementation of trip reduction targets will be supported by new interlocal or sub-regional agreements
- Strategies are flexible, monitored and adjusted as needed over time (includes tracking trends for Internet, e-commerce)
- Funding is provided for demonstration projects, plus some ongoing funding for new TDM strategies found effective

# **Focus of TDM Package**

SOV and other trip reduction through the use of:

- Incentives
- Increasing access to alternative modes
- Public information, education and promotion
- Land use strategies

# Strategies in the TDM Package

# **VANPOOLING**

- Maximize vanpooling in the corridor (minimum of a five-fold increase)
  - \* Intensive marketing of vanpooling, including start-up subsidies
  - \* Use of new "value-added" incentives (e.g., frequent flyer miles for vanpoolers)
  - \* Creation of a revolving no-interest loan fund for purchasing vans
  - \* 50% fare subsidy
  - \* Provide sufficient infrastructure (e.g., small park & ride lots)
  - \* Owner-operated vanpool promotion

#### PUBLIC INFORMATION, EDUCATION & PROMOTION PROGRAMS

- Establish ongoing public education and awareness program specific to the corridor (focus on issues and transportation alternatives)
- Provide traveler information system(s), including interactive ridematch and transit information
- Provide personalized trip planning assistance, including for transit

## Strategies in the TDM Package

#### **EMPLOYER-BASED PROGRAMS**

Increase work choices

Telecommuting, flextime, compressed work schedules, multiple shifts

Proximate commuting (assigning employees to work sites close to home)

Incentives to employers to offer work choices (e.g., tax credits)

- For current commuter trip reduction program new incentives and resources to help CTR-affected employers obtain CTR goals (e.g., grants, tax credits, staff support)
- Expanded CTR-like program aimed at smaller employers plus those larger ones not affected by CTR laws (non-regulatory, voluntary based)
- Support development and core operations of transportation management associations (TMA)
- Parking cash-out program incentives and financing

#### LAND USE AS TDM

Compact, mixed-use, non-motorized and transit friendly (re)development in target areas (urban centers, suburban clusters, key arterials, transit station areas, transit centers, park-and-ride lots)

- Transit-oriented development (TOD)
- Code changes, streamlining processes, local connectivity retrofitting projects to support (re)development
- Programs (code assistance, design review support) to help jurisdictions and developers implement compact (re)development
- New parking management programs

#### OTHER MISCELLANEOUS TDM PROGRAMS

Innovative transit and vanpool fare media, incentives, demonstrations, matching funds, etc. [e.g., area-wide "Smart Card" (FlexPass) programs for Eastgate, downtown Bellevue, north Renton industrial area, Bothell business parks, Redmond, downtown Kirkland, Tukwila]

- Non-commute trips TDM programs (research and demonstrations)
- Other miscellaneous incentives (local and state tax credit programs, developer incentives)

# 2. EXPANDED TDM PACKAGE

#### Overview

This major element will include the range of regional pricing actions being evaluated by the PSRC. The potential impacts of the following actions will be examined in the context of the I-405 Corridor:

- Region-wide congestion pricing (RCP);
- ♦ Fuel taxes (revenue = RCP);
- ◆ Fuel taxes (revenue = 50% RCP);

- ♦ Mileage charge (revenue = RCP);
- Parking charges;
- ♦ High occupancy toll lanes.

# 2. NEW TRANSIT EXPANSION BY 50% WITHIN STUDY AREA

Transit service levels would be increased by 25% compared to the current King County 6-year plan, assumed to be in place by 2007.

Transit service levels would be increased by 50% compared to the current King County 6-year plan, assumed to be in place by 2007.

# 3. DOUBLE TRANSIT SERVICE WITHIN STUDY AREA

#### Overview

Transit service levels would be doubled compared to the current King County 6-year plan, assumed to be in place by 2007. The effects of I-695 on short-term transit service have not been assumed. Transit service coverage and design would also be revised to more closely match travel patterns within the study area. These revisions could include more center-to-center movements, connections between neighborhoods and centers, and development of an appropriate 'grid' transit system within the study area.

# 4. PHYSICALLY SEPARATED HIGH-CAPACITY TRANSIT (HCT)

# **Description**

A high-capacity transit solution would be designed for the I-405 corridor. The exact technology of this solution would be determined in later studies, but could include busway, light rail, monorail, or similar mode that could operate at speeds of up to 70 mph. The HCT alignment would generally follow the I-405, SR 520 and I-90 freeway corridors in existing freeway, arterial, or railroad right-of-way. The key characteristic of this solution would be that it would have a dedicated alignment, removing it from congestion-induced delays. Bus service would be reconfigured to provide maximum accessibility to the HCT system.

Alternatives 1 and 2 assume a full-scale HCT within the corridor, likely using some form of rail technology. Alternative 3 assumes a bus rapid transit (BRT) concept, building on the existing freeway HOV system.

| High Capacity Transit           |             |   |  |
|---------------------------------|-------------|---|--|
| Jurisdiction                    | Project ID* | Projects  |  |
| Tukwila & Renton                | T.HCT-1     | HCT- SeaTac to Renton CBD                             |  |
| Renton                          | T.HCT-2     | HCT-Renton CBD to NE 44 <sup>th</sup> (Port Quendall) |  |
| Renton, Newcastle<br>& Bellevue | T.HCT-3     | HCT- NE 44 <sup>th</sup> (Port Quendall) to Factoria  |  |
| Bell & Issaquah                 | T.HCT-4     | HCT – Factoria to Issaquah                            |  |

| High Capacity Tran              | High Capacity Transit |                                     |  |  |
|---------------------------------|-----------------------|-------------------------------------|--|--|
| Bellevue                        | T.HCT-5               | HCT – Factoria to Downtown Bellevue |  |  |
| Bell & Redmond                  | T.HCT-6               | HCT – Bellevue to Redmond           |  |  |
| Bell & Kirkland                 | T.HCT-7               | HCT – Bellevue to Totem Lake        |  |  |
| Kirk, King Co. &<br>Woodinville | T.HCT-8               | HCT – Totem Lake to Bothell         |  |  |
| Bothell & Sno Co.               | T.HCT-9               | HCT – Bothell to Lynnwood           |  |  |

| High Capacity Transit | Stations                                       |
|-----------------------|--|
| Sea-Tac               | Sea-Tac  |
| Tukwila               | Southcenter                                    |
| Tukwila & Renton      | Tukwila (Longacres)                            |
| Renton                | Downtown Renton                                |
| Renton                | North Renton                                   |
| Renton                | Port Quendall                                  |
| Bellevue              | Factoria                                       |
| Bellevue              | Bellevue Transit Center                        |
| Bellevue              | Bellevue Library                               |
| Bell & Kirk           | SR 520/Northup Way                             |
| Kirkland              | Downtown Kirkland (NE 85 <sup>th</sup> Street) |
| Kirkland              | Totem Lake                                     |
| Woodinville           | NE 145 <sup>th</sup> Street                    |
| Woodinville           | Woodinville                                    |
| Bothell               | NE 195 <sup>th</sup> Street                    |
| Bothell               | Canyon Park                                    |
| Snohomish County      | 164 <sup>th</sup> Street SW (Ash Way)          |
| Bellevue              | Eastgate                                       |
| Bellevue              | Lakemont                                       |
| Issaquah              | Issaquah                                       |
| Bellevue              | 132 <sup>nd</sup> Avenue NE                    |
| Bellevue              | 148 <sup>th</sup> Avenue NE                    |
| Redmond               | Overlake (NE 40 <sup>th</sup> Street)          |
| Redmond               | Redmond/Town Center                            |
| Redmond               | Bear Creek                                     |
| Mercer Island         | Mercer Island                                  |

# 6. ADD ARTERIAL HOV AND TRANSIT PRIORITY

# **Overview**

Create lanes, intersection queue jumps and signals that provide priority to HOVs and transit on major arterials in the study area.

| Arterial HOV      |          |  |
|-------------------|----------|--|
| Bellevue          | R.HOV-36 | Coal Creek Pkwy I-405 to Forest Drive  |
| Bellevue          | R.HOV-37 | NE 8th Street I-405 to 120th Ave NE  |
| Kirkland, Redmond | R.HOV-38 | NE 85th St Kirkland Way to 148th Ave NE  |
| Kirkland          | R.HOV-39 | NE 116th 98th Ave NE to 124th Ave NE   |
| Kirkland          | R.HOV-40 | NE 124th 100th Ave NE to 132 Ave NE  |
| Bothell           | R.HOV-41 | SR 527 From SE 228th St to SR 524  |
| Renton            | R.HOV-43 | SR 169 - SR 405 to Riverview Park vicinity - HOV/Transit Preferential treatment. |
| Renton            | R.HOV-44 | SW 27th St Corridor in Renton - Oaksdale Ave to SR 167                           |
| Redmond           | R.HOV-47 | Avondale Rd from Novelty Hill Road to Avondale Way Construct SB HOV lane         |
| Renton, King Co   | R.HOV-48 | SW 43 St (SR 167 to 140 Ave SE)  |
| Renton            | R.HOV-49 | Logan Ave N / N 6 St (S 3 St to Park Dr)   |
| Renton            | R.HOV-51 | Park Dr - Sunset Blvd (Garden Ave to Duvall Ave NE)                              |
| Kenmore           | R.HOV-53 | 68 Ave NE (Smds Rd to SR 522) - Construct NB HOV lane                            |
| Redmond           | R.HOV-55 | Willows Rd (Redmond Wy to NE 124 St)   |
| Kirkland, Bell    | R.HOV-56 | Lake Wa Blvd (SR 520 to Yarrow Bay) - SB HOV lane                                |
| Kirkland          | R.HOV-57 | NE 68 St/NE 72 PI (I-4405 Vicinity) – Que Bypass                                 |
| Bellevue          | R.HOV-60 | Bellevue Way - I-90 to South Bellevue Park and Ride                              |

# 7. HOV EXPRESS ON I-405 WITH DIRECT ACCESS RAMPS

# Overview

Complete the series of ramps connecting arterials and freeways directly to HOV lanes on I-405. This allows carpools, vanpools and buses to use the HOV lanes without weaving across other traffic. HOV direct access ramps have already been designed by Sound Transit in downtown Bellevue and Kirkland, and design studies are starting for HOV ramps in downtown Renton.

| HOV Interchange Ramps (Direct Access) |           |  |
|---------------------------------------|-----------|--|
| Tukwila                               | R.HOV-25  | SR 5 I/C @ Tukwila Fwy to Fwy HOV ramps, |
| Renton                                | R.HOV-26  | SR 167 I/C Fwy to Fwy HOV ramps,         |
| Bellevue                              | R.HOV-27  | SR 90 I/C Fwy to Fwy HOV ramps,          |
| Bellevue                              | R.HOV-28  | SR 520 Fwy to Fwy HOV ramps,             |
| Bothell                               | R.HOV-29  | SR 522 Fwy to Fwy HOV Ramps              |
| Sno. Co.                              | R.HOV-30  | SR 5 I/C @ Swamp Creek Fwy HOV ramps.    |
| Kirkland                              | R.HOV-61  | NE 85th                                  |
| ST                                    | R.HOV-101 | I-405 @ Lind – HOV Direct Access         |
| Newcastle                             | R:HOV-65  | 112th St SE (In-Line Station)            |

| Committed HOV Projects |          |  |
|------------------------|----------|--|
| Bellevue               | HOV-01   | I-405 at NE 4th/6th/8th (Bellevue)/Construct new HOV direct access at NE 6th, Improve arterial capacity at NE 4th/8th interchanges |
| Bellevue               | HOV-02   | I-90 (Eastgate)/New I-90 HOV direct access connection to P&R   |
| Renton                 | R.HOV-32 | Between Sunset and SR-900 /Park Ave interchange in Renton  |
| ST                     | R:HOV-66 | I-405 at 128th St/HOV direct access improvements   |
| Renton                 | R.HOV-33 | NE 44th I/C - HOV Direct Access and Arterial Improvements(Assumes Port Quendall)   |
| WSDOT                  | HOV-14   | I-405 (I-5 Swamp Creek to SR 527)/Construct NB and SB HOV lanes total 6 lanes  |
| Bothell                | R.HOV-62 | SR 522 Campus Access   |
| Bothell                | R.HOV-63 | SR 527 Flyer Stop  |
| ST                     | HOV-102  | Woodinville Arterial Enhancements/HOV arterial enhancements  |

# 8. ADD PARK-AND-RIDE CAPACITY TO MEET DEMAND

# **Overview**

Provides additional park-and-ride capacity at existing locations and creates selected new lots based on forecasted transit and carpool demand. The locations initially identified for expansion are listed below. These locations will be refined during the evaluation process.

| Park and Rides      |         |  |
|---------------------|---------|--|
| Renton              | T.PR-3  | Renton East Highlands new Park and Ride  |
| Tukwila & Renton    | T.PR-6  | Tukwila Commuter Rail (Longacres)        |
| King County         | T.PR-5  | 140th Ave SE and Petrovitsky Rd Vicinity |
| King County         | T.PR-8  | SR 169 and 140th WY SE                   |
| King County         | T.PR-9  | Petrovitsky Rd and 157th Ave SE          |
| King County         | T.PR-10 | 140th Ave SE and SE 192nd                |
| King County         | T.PR-11 | SR 515 and SE 208th                      |
| Kent & Renton       | T.PR-12 | SR 167 and SW 43rd                       |
| Kent & Renton       | T.PR-13 | SR 167 and 84th Ave                      |
| Redmond             | T.PR-17 | Willows Rd @ NE 100th                    |
| Redmond             | T.PR-18 | SR 202 @ NE 100th                        |
| Bellevue & Kirkland | T.PR-20 | South Kirkland                           |
| Redmond             | T.PR-21 | Overlake                                 |
| Bellevue            | T.PR-22 | South Bellevue                           |
| Bellevue            | T.PR-23 | Newport (112 <sup>th</sup> Ave. SE)      |
| King County         | T.PR-24 | NE 160th/Brickyard Rd                    |
| Bothell             | T.PR-25 | Canyon Park (I-405 and SR 527)           |
| Tukwila             | T.PR-30 | Tukwila                                  |
| Kirkland            | T.PR-31 | Houghton                                 |
| Kirkland            | T.PR-32 | Kingsgate                                |
| Medina              | T.PR-33 | Evergreen Point                          |
| Bellevue            | T.PR-34 | Wilburton                                |
| King County         | T.PR-35 | Lakemont                                 |
| Redmond             | T.PR-36 | Redmond                                  |
| Redmond             | T.PR-37 | Bear Creek                               |
| Bothell             | T.PR-38 | Bothell                                  |
| Kenmore             | T.PR-39 | Northshore                               |
| Kenmore             | T.PR-40 | Kenmore                                  |
| Woodinville         | T.PR-41 | Woodinville                              |
| Mercer Island       | T.PR-42 | Mercer Island                            |
| Bellevue            | T.PR-43 | Eastgate                                 |

# 9. ADD TRANSIT CENTER CAPACITY TO MEET DEMAND

# Overview

Expand existing transit centers and create new transit centers to accommodate increased transit service. The specific locations for expansion and new centers will be identified during the evaluation process. Alternatives 1, 2, and 3 will require transit center capacity to accommodate a significant increase in transit service, at designated HCT stations, and at feeder bus connections. A partial listing is below.

| Transit Center Capacity |         |                     |
|-------------------------|---------|---------------------|
| Renton                  | T.TC-6  | Downtown Renton     |
| Bellevue                | T.TC-8  | Downtown Bellevue   |
| Redmond                 | T.TC-9  | Overlake            |
| Redmond                 | T.TC-10 | Redmond/Town Center |
| Kirkland                | T.TC-12 | Downtown Kirkland   |
| Kirkland                | T.TC-14 | Totem Lake          |

# 10. BASIC I-405 IMPROVEMENTS

# **Overview**

This major element fixes existing bottlenecks and locations with safety deficiencies along I-405.

| Basic I-405 Improvement Projects |             |   |
|----------------------------------|-------------|---|
| Jurisdiction                     | Project ID* | Projects  |
| Renton                           | R.BI.1      | SR 167 Interchange - Direct Connection with auxiliary lane SB SR 169 to SR 167                  |
| Kirkland                         | R.BI.2      | Continue NB climbing Lane from NE 70th to NE 85th and continue as auxiliary Lane to NE 116th    |
| Kirkland                         | R.BI.3      | SB auxiliary Lane NE 124th to NE 85th   |
| Bellevue                         | R.BI.4      | I-90 / Coal Creek Interchange   |
| Bothell, King<br>Co, Kirkland    | R.BI.5      | SB SR 522 to 124th continue climbing lane as an auxiliary lane                                  |
| Bothell                          | R.BI.6      | NB auxiliary lane SR 522 to SR 527  |
| Renton                           | R.BI.7      | Kennydale Hill climbing lane - SR 900 to 44th - NB 900 to 30th, SB 44th - 30th                  |
| Bellevue                         | R.BI.8      | I-90 to Bellevue SB HOV direct connection to I-90 west  |
| Bellevue                         | R.BI.9      | NB auxiliary lane I-90 to NE 8th  |
| Bellevue                         | R.BI.10     | Increase SR 405 to Eastbound SR 520 Ramp capacity   |
| Renton                           | R.BI.14     | NB Auxiliary Lane I-5 to SR 167   |
| Various                          | R.FR-24     | Improve interchange geometrics at all major truck routes (WB-20 Design Criteria)                |
| WSDOT                            | R-55        | I-405/SR 167 Interchange/Construct new southbound I-405-to-southbound SR 167 ramp modification. |

# 11. ADD 2 GENERAL PURPOSE LANES EACH DIRECTION ON I-405

Add up to 2 general purpose lanes to I-405 through widening of the existing freeway. A design option is to create collector-distributor lanes in selected corridor segments (See Element 12).

# 12. PROVIDE COLLECTOR DISTRIBUTOR LANES ON I-405

#### Overview

Collector- Distributor lanes provide more time for traffic to safely enter or exit from roadway by providing lanes removed from general travel. This is being considered as a design option to handle the addition of one or two general purpose lanes in each direction along I-405 in certain sections. Collector-Distributor lanes have been included as parts of other elements.

# 13. ADD TWO EXPRESS LANES EACH DIRECTION ON I-405

#### Overview

This element consists of a four-lane express facility designed to operate with limited interchanges along the length of I-405. The express lanes would be physically separated from the rest of I-405 through the use of barriers. Certain segments could operate within the median of I-405, while other segments would need to be elevated, in tunnel, or on separate alignments.

The express lanes could operate as a general purpose facility or as a managed facility, such as a 'High Occupancy Toll (i.e. HOT) lane. Certain users could be allowed to use the express lanes for free, while other users could be allowed to 'buy-in' to available capacity. The capacity would be priced depending upon demand.

| Express Lanes – 2 Lanes each Direction between Major Interchanges |            |   |
|---|------------|---|
| Jurisdiction  | Project ID | Projects  |
| Tukwila, Renton   | R.TC-20    | Add Express lanes - SR 5 Tukwila to SR 167              |
| Renton  | R.TC-21    | Add Express lanes - SR 167 to SR 900 north Renton I/C   |
| Renton, Newcastle,<br>Bellevue                                    | R.TC-22    | Add Express lanes -SR 900 North Renton I/C to SR 90     |
| Bellevue  | R.TC-23    | Add Express lanes - SR 90 to SR 520                     |
| Bellevue, Kirkland  | R.TC-24    | Add Express lanes - SR 520 to NE 70th                   |
| Kirkland  | R.TC-25    | Add Express lanes - NE 70th to NE 124th                 |
| Kirkland, King<br>County, Bothell                                 | R.TC-26    | Add Express lanes - NE 124th to SR 522                  |
| Bothell   | R.TC-27    | Add Express lanes - SR 522 to SR 527                    |
| Bothell and Snohomish Co.   | R.TC-29    | SR 527 to vicinity of Damson Road                       |
| Renton  | R.TC-28    | Add Express lanes- on SR 167 north of 180th up to I-405 |

| Express Lanes –Acc     | Express Lanes –Access Locations |  |  |  |  |
|------------------------|---------------------------------|--|--|--|--|
| Snohomish Co           | R.TC-30                         | Northern end to Express lanes - Between SR 527 and I-5 |  |  |  |
| King Co/Kirkland       | R.TC-31                         | Slip Ramp- South of NE 160th St                        |  |  |  |
| Kirkland               | R.TC-32                         | Slip Ramp- South of NE 70th St                         |  |  |  |
| Bellevue,<br>Newcastle | R.TC-33                         | Slip Ramp- South of Coal Creek Pkwy                    |  |  |  |
| Renton                 | R.TC-34                         | Interchange access location- SR 167                    |  |  |  |

# 14. WIDEN SR 167 BY 1 LANE EACH DIRECTION TO KENT (STUDY AREA BOUNDARY)

#### **Overview**

SR 167 would be widened by one lane in each direction to accommodate additional demands due to growing demands and the effects of improvements at the I-405/SR 167 interchange. The widening is assumed to extend at least to the study area boundary in Kent. Alternative 3 will consider the potential to add a total of two lanes in each direction to SR 167 within 1 mile of I-405, due to the substantial capacity additions assumed for I-405. This element does not presume that SR 167 would be redesignated as I-405, although each of these improvements would be compatible with such a redesignation if it occurs.

## 16. IMPROVE CONNECTING FREEWAY CAPACITY TO I-405

#### **Overview**

Enhance the capacity of connecting freeways by one lane in each direction (for a distance of approximately ½ to 1 mile on both sides of I-405) to avoid bottlenecks at the connections to I-405.

| Connecting Freeway Capacity (One Lane, Each Direction) |            |   |  |  |
|--|------------|---|--|--|
| Jurisdiction   | Project ID | Projects  |  |  |
| Tukwila  | R.CF.1     | SR 518 I-405 to SR 99/Airport Access                        |  |  |
| Bellevue   | R.CF.3     | I-90 South Bellevue to Eastgate                             |  |  |
| Bellevue   | R.CF.4     | SR 520 Bellevue Way to 148 <sup>th</sup> Avenue NE          |  |  |
| Bothell, Woodinville                                   | R.CF.5     | SR 522 Bothell to NE 195th                                  |  |  |
| Snohomish Co,<br>Lynnwood                              | R.CF.6     | SR 525 I-405 to SR 99                                       |  |  |
| Renton, Kent   | R.CF.8     | SR 167 I-405 to Study Area Boundary                         |  |  |
| Tukwila  | R.CF.9     | I-5 at Tukwila  |  |  |
| Lynnwood   | R.CF.10    | I-5 at Swamp Creek – 196 <sup>th</sup> to 164 <sup>th</sup> |  |  |

## 17. IMPLEMENT PLANNED ARTERIAL IMPROVEMENTS

## Overview

This major element involves the implementation of several arterial improvements called for in local agency plans and the Eastside Transportation Program (ETP). The ETP has been an ongoing process by regional, county and local governments to coordinate transportation planning and funding in East King County. Many of the ETP projects have already been examined in detail by the agencies involved and have been determined to be effective in addressing a variety of transportation issues.

| Eastside Transporta    | ation Projects | - Committed Projects  |  |  |  |
|------------------------|----------------|---|--|--|--|
| Jurisdiction           | Project ID     | Projects  |  |  |  |
| Bellevue               | R-08           | NE 29th PI (148th Ave NE to NE 24th St)/Construct new 2-lane road   |  |  |  |
| Bellevue               | R-101          | 150th Ave SEWiden to 7 lanes from SE 36th to SE 38th; add turn lanes  |  |  |  |
| KCDOT                  | R-40           | Juanita-Woodinville Way (NE 145 St to 112th Ave NE) Widen to 5 lanes + CGS, walkway/pathway   |  |  |  |
| KCDOT                  | R-47           | NE 124 St (Willows Rd to SR 202) Widen to 4/5 lanes + CGS, bike facilities; traffic signal.   |  |  |  |
| Kirkland               | R-21           | NE 120 St (Slater Ave to 124 Ave NE) Construct new 3-lane roadway with ped/bike facilities  |  |  |  |
| Redmond                | R-111          | Willows Rd Corridor Improvements Channelization of Willows Rd/Redmond Way intersection and widening of Willows Rd from NE 116th to NE 124th   |  |  |  |
| Redmond                | R-26           | NE 90 St (Willows Rd to SR 202) Construct new 4/5 lanes + bike facilities   |  |  |  |
| Redmond                | R-28           | West Lake Sammamish Parkway (Leary Way to Bel-Red Rd) Widen to 4/5 lanes + CGS, bike lanes  |  |  |  |
| Renton                 | R-36           | Oakesdale Ave SW (SW 31st to SW 16th) Construct new 5 lane roadway with CGS   |  |  |  |
| Snohomish Co.          | R-10           | SR 524 (24 St SW to SR 527) Widen to 4/5 lanes including sidewalks, bike lanes  |  |  |  |
| Snohomish Co.          | R-117          | 39th Ave SE Realignment at SR 524 and York Rd<br>Construct 4-way intersection to replace 2 offset<br>intersections  |  |  |  |
| Bothell, Snohomish Co. | R.AC-21        | 120th NE/39th SE - NE 95th to Maltby Rd - 4/5 lanes including new connection  |  |  |  |
| Woodinville            | R-51           | Woodinville-Snohomish Rd/140 Ave NE (NE 175 St to SR 522) Widen to 4/5 lanes + CGS, bike lanes  |  |  |  |
| Woodinville/<br>WSDOT  | R-25           | SR 202 Corridor Improvements(East Lake Sammamish Pkwy to Sahalee Way) Widen to 3/5 lanes; intersection improvements with bike/ped facilities  |  |  |  |
| KCDOT                  | R-39           | 140 Ave SE (SR 169 to SE 208 St) Widen to 5 lanes SR 169 to SE 196 St, widen for turn channels on SE 196. Combines 2 King County CIP projects. A major North-South arterial which serves the Soos Creek Plateau and Fairwood. |  |  |  |

| Eastside Transport | ation Projects | - Planned Projects   |
|--------------------|----------------|--|
| Jurisdiction       | ETP#           | Projects   |
| Bellevue           | R.PA-2         | 148 Ave SE (SE 24 St to SE 28 St) New SB lane from SE 24 St to the WB I-90 on-ramp (ETP 203)   |
| Bothell            | R.PA-3         | SR 522 Multimodal Corridor Project Widen SR-522 mostly within existing ROW to provide transit lanes, safety improvements, consolidated driveways & left turn lanes; and sidewalks. (ETP R-107) |
| Bothell            | R.PA-4         | SR 524 (SR 527 to Bothell City Limit) Widen to 5 lanes + CGS, bike facilities (class III) (ETP R-11)   |
| KCDOT              | R.PA-5         | SE 212 Way/SE 208 St (SR 167 to Benson Rd/SR 515)<br>Widen to 6 lanes + bike facilities, Transit/HOV preferential<br>treatment, turn channels. (ETP R-46)                                      |
| KCDOT              | R.PA-8         | NE 124/128 St (SR 202 to Avondale Rd) Widen to 4/5 lanes including bike & equestrian facilities (ETP 164)  |
| KCDOT              | R.PA-10        | NE 132 St Extension (132 Ave NE to Willows Rd Ext.)<br>Construct new 3 lane arterial with CGS, bike lanes (ETP<br>61)  |
| Kenmore/KCDOT      | R.PA-11        | 68 Ave NE (Simonds Rd to SR 522) Construct NB HOV lane total of 5/6 lanes (ETP 22)   |
| Kirkland           | R.PA-12        | 124 Ave NE (NE 85 St to Slater Rd NE) Widen to 3 lanes (s. of NE 116th St, 5 lanes n. of NE 116th St with ped/bike facilities (ETP R-23)   |
| Kirkland           | R.PA-13        | NE 132 St (100 Ave NE to 116 Way NE) Widen to 3 lanes + CGS, Bike lane (ETP R-124)   |
| Kirkland           | R.PA-14        | NE 100 St (117 Ave NE to Slater Ave) Construct<br>bike/pedestrian/emergency Vehicle overpass across I-405<br>(ETP 309)   |
| Newcastle          | R.PA-15        | Coal Creek Pkwy (SE 72 St to Renton City Limits) Widen to 4/5 lanes + CGS, bike lanes, traffic signals (ETP R-24)  |
| Redmond            | R.PA-16        | Redmond 148th Ave NE Corridor - 3 projects Turn lane and channelization improvements along corridor – BROTS; (ETP R-112)   |
| Redmond            | R.PA-17        | Bear Creek Pkwy Construct new 162nd Ave NE arterial and new 72nd St arterial w/ bike/ped and CSG; widen Bear Creek Pkwy (ETP R-110)  |
| Redmond            | R.PA-18        | Union Hill Rd (Avondale Rd to 196 Ave NE) Widen to 4/5 lanes with bike facilities (ETP R-27)   |
| Renton             | R.PA-19        | Duvall Ave NE (NE 4 St to NE 25 Court -City Limits)<br>Widen to 5 lanes + CGS, bikeway (ETP R-31)  |
| Renton             | R.PA-20        | Oakesdale Ave SW (Monster Rd to SR 900) Replace<br>Monster Rd Bridge; widen to 4/5 lanes +Bike Lanes + CGS<br>(ETP R-35)   |
| Renton             | R.PA-21        | Rainier Ave / Grady Way (intersection) Grade separation (ETP R-33)   |

| Eastside Transportation Projects - Planned Projects |         |   |  |  |  |
|---|---------|---|--|--|--|
| Renton  | R.PA-22 | SW Grady Way (SR 167 to SR 515) Rechannelize and modify signals for a continuous eastbound lane (ETP R-37)                          |  |  |  |
| Renton  | R.PA-23 | SR 167 at East Valley Road New southbound off-ramp and signalization at East Valley Road (ETP 255)                                  |  |  |  |
| Renton/ KCDOT                                       | R.PA-24 | Soos Creek Regional Links Placeholder for Trans-Valley Study (ETP R-115)  |  |  |  |
| Woodinville   | R.PA-25 | SR 522 Interchange Package(SR 522/SR 202<br>&SR522/195th St)) Access improvements and new<br>freeway ramps (ETP R-53) (See R.AC-30) |  |  |  |
| Woodinville   | R.PA-26 | SR202 Corridor Package (SR202/148th Ave & SR202/127th Place) Intersection improvements (ETP R-54)                                   |  |  |  |
| WSDOT   | R.PA-27 | SR 520/SR 202 Interchange Complete interchange by constructing a new ramp and thru lane on 202 to SR 520 (ETP R-29)                 |  |  |  |
| WSDOT   | R.PA-28 | SR 202 / 140 Place NE (NE 124 St to NE 175 St) Widen 4/5 lanes (ETP R-43) (See R.AC-17, 18)   |  |  |  |

## 18. EXPAND CAPACITY ON NORTH-SOUTH ARTERIALS

## **Overview**

This element expands arterial capacity to provide connected north-south travel. This element would facilitate vehicular movement without requiring as many trips along I-405.

| North-South Arterial Projects            |         |  |  |  |  |
|--|---------|--|--|--|--|
| King Co                                  | R.AC-2  | 138th Ave - Petrovitsky Rd to SR 169- Add 1 lane                               |  |  |  |
| King Co, Renton                          | R.AC-3  | 138th Ave SE - Construct roadway link to 4/5 lanes- SR<br>169 to NE 4th St     |  |  |  |
| Redmond                                  | R.AC-15 | Willows Rd- NE 90th St to NE 124th St- Add 1 lane each direction               |  |  |  |
| King Co,<br>Woodinville                  | R.AC-16 | Willows Rd- NE 124th St to NE 145th St- construct new facility -4/5 lanes      |  |  |  |
| Woodinville                              | R.AC-17 | SR 202- NE 145th St to SR 522- widen to 5 lanes                                |  |  |  |
| Redmond, King<br>County, Woodinville     | R.AC-18 | SR 202 - NE 90th to NE 145th   |  |  |  |
| Bothell, Snohomish<br>County, Mill Creek | R.AC-20 | SR 527/Bothell Everett Hwy - SR 522 to SR 524 - Widen by 1 lane each direction |  |  |  |
| Bothell, Woodinville                     | R.AC-30 | SR 202 connection across SR 522 to 120th                                       |  |  |  |
| Tukwila                                  | R.AC-35 | SR 181- S 180th to S 200th   |  |  |  |
| Tukwila                                  | R.AC-36 | SR 181- 144th to Strander Blvd.  |  |  |  |
| Tukwila                                  | R.AC-37 | Southcenter Blvd - Tukwila Pky to Strander Blvd                                |  |  |  |

## 19. UPGRADE ARTERIAL CONNECTIONS TO I-405

### Overview

This element provides for upgrading arterial connections to I-405. These projects are intended to improve operations at on- and off-ramps as well as on the arterials themselves. An additional lane in each direction was assumed for these arterials, although further analysis may show that similar benefits could be achieved through selected intersection improvements in some cases.

| Arterial Interchange Improvements (One Lane Each Direction) |            |   |  |  |
|---|------------|---|--|--|
| Jurisdiction  | Project ID | Projects  |  |  |
| Tukwila   | R.IC-3     | SR 181 West Valley Highway/ Interurban                    |  |  |
| Renton  | R.IC-4     | SR 169 Maple Valley Hwy SR 900 to NE 5th                  |  |  |
| Bellevue  | R.IC-6     | Coal Creek Pkwy I-405 to Factoria Blvd.                   |  |  |
| Kirkland, Redmond   | R.IC-8     | NE 85th St-Kirkland Way to 124th                          |  |  |
| Kirkland  | R.IC-9     | NE 116th- 114th Ave NE to 124th Ave NE                    |  |  |
| Kirkland  | R.IC-10    | NE 124th- 113th Ave NE to 124th Ave NE                    |  |  |
| Kirkland  | R.IC-26    | NE 132nd - 113th to 124th Ave NE                          |  |  |
| Bothell   | R.IC-11    | SR 527-228th to SR 524                                    |  |  |
| Kirkland, King Co   | R.IC-14    | New half diamond interchange to/from north at NE 132nd St |  |  |
| Bothell   | R.IC-21    | New SR 405 Interchange at 240th Street SE(Bothell)        |  |  |
| Bothell   | R.IC-24    | NE 160th Street-112th Ave to Juanita/Woodinville Way      |  |  |

## 21. CORRIDOR PEDESTRIAN AND BICYCLE IMPROVEMENTS

### Overview

Non-motorized improvements throughout the corridor provide needed connections between modes (e.g. pedestrian overpasses from park and rides to freeway bus stops) and allow for commutes or trips to be made by walking or biking. Alternative 3 will exclude all of the 'long-distance' trails (identified below under the heading Pedestrian/Bicycle Connections) from this element. These improvements need further refinement in the context of other major elements in the alternatives.

| Pedestrian/Bicycle | ( I-405 Crossi | ngs)  |
|--------------------|----------------|---|
| Bellevue           | NM. CR-1       | Lk Washington Blvd/112th Ave. SE - crossing I-405 from 106th Ave. SE to 112th Place SE - Add sidewalks                                    |
| Bothell            | NM. CR-2       | Fitzgerald Rd/27th Ave crossing I-405 from 228th St. SE to 240th St. SE - Add ped/bike facility   |
| King County        | NM. CR-3       | SR-524 (Filbert Road) - crossing I-405 from North Rd to Locust Way - Add sidewalk/paved shoulder  |
| King County        | NM. CR-4       | Damson Road - crossing I-405 from 192nd St SW to Logan Rd - Add sidewalk/paved shoulder   |
| Renton             | NM. CR-5       | NE Park Drive - crossing I-405 from SR-900/Sunset Blvd to Lake Wash Blvd - Add sidewalk/paved shoulder                                    |
| Renton             | NM. CR-6       | Jackson SW/Longacres Dr SW - crossing I-405 from S.<br>Longacres Way to Monster Rd SW - Add sidewalk/paved<br>shoulder                    |
| Bothell            | NM. CR-7       | Connection between Sammamish River Trail and North<br>Creek Trail - between SR-522 and NE 195th St Add<br>ped/bike over-crossing of I-405 |
| Bothell            | NM. CR-8       | SR-527 - crossing I-405 from 220th St SE to 228th St SE - ped/bike facility   |

| Pedestrian/Bicycle             | Pedestrian/Bicycle Connections |   |  |  |  |
|--------------------------------|--------------------------------|---|--|--|--|
| Bellevue                       | NM.P&B-4                       | Lake Washington Blvd - SR 405 to SE 60th - Add ped/bike facilities  |  |  |  |
| Bellevue, Kirkland             | NM.P&B-2                       | BNSF Right of Way - SE 8th to Totem Lake - Add ped/bike facility.   |  |  |  |
| Bellevue,<br>Newcastle, Renton | NM.P&B-6                       | Lake Washington Blvd/112th - SE 60th to May Creek I/C - Add ped/bike facility   |  |  |  |
| Bothell                        | NM.P&B-5                       | North Creek Trail Link - 240th to 232nd - Add ped/bike trail.   |  |  |  |
| Renton                         | NM. P&B 14                     | Cedar River Trail S. Extension - I-405 to Burnett Ave - Add ped/bike facilities (ETP NM-17)   |  |  |  |
| Renton                         | NM. P&B 15                     | Cedar River Trail/Lake Washington Blvd Connector -<br>Cedar River Trail to Lk Wash Blvd Loop - Add ped/bike<br>facilities (ETP NM-15) |  |  |  |
| Renton                         | NM. P&B 16                     | Cedar-Duwamish Trail Connection - I-405 to Interurban<br>Ave. S Add ped/bike facilities   |  |  |  |
| Renton                         | NM. P&B 17                     | I-405/SR-167 trail connection - Lind Ave. SE to Talbot Rd S Add trail connection  |  |  |  |
| Renton/Tukwila                 | NM. P&B 18                     | I-405/1-5 - via or around I-405/I-5 interchange - Add ped/bike facilities   |  |  |  |
| Tukwila                        | NM. P&B 19                     | SR-181/W. Valley Hwy - crossing I-405 from Strander Blvd to Fort Dent Way - Add bike lanes  |  |  |  |

# 22. I-405 CORRIDOR INTELLIGENT TRANSPORTATION SYSTEM ENHANCEMENTS

### **Overview**

This major element provides ITS enhancements to facilitate more reliable traffic flow.

| I-405 Corridor ITS Enhancements |            |   |  |  |
|---------------------------------|------------|---|--|--|
| Jurisdiction                    | Project ID | Projects  |  |  |
| Various                         | ITS.1      | Add Camera Coverage to decrease TMC blind spots |  |  |
| Various                         | ITS.2      | Complete Ramp Metering                          |  |  |
| Various                         | ITS.4      | Dual Lane Ramp Metering                         |  |  |
| Various                         | ITS.5      | Increased Incident Response                     |  |  |
| Various                         | ITS.6      | Traffic adaptive control on arterials           |  |  |
| Various                         | ITS.7      | TIS before all major decision points            |  |  |
| Various                         | ITS.8      | WSDOT support of in-vehicle traffic information |  |  |
| Various                         | ITS.9      | Arterial camera coverage                        |  |  |

## 23. I-405 CORRIDOR FREIGHT ENHANCEMENTS

## **Overview**

This major element focuses on improvements specific to freight movements. Note that freight will benefit as well from general purpose traffic expansion described in other elements.

| I-405 Corridor Fre | l-405 Corridor Freight Enhancements |   |  |  |  |  |
|--------------------|-------------------------------------|---|--|--|--|--|
| Jurisdiction       | Project ID                          | Projects  |  |  |  |  |
| Renton             | R.FR-10                             | Modify SR 167 Interchange for East to South Freight movements   |  |  |  |  |
| Various            | R.FR-11                             | Improve truck flow with ITS   |  |  |  |  |
| Various            | R.FR-23                             | Remote area for overnight freight parking and staging for early morning deliveries  |  |  |  |  |
| Various            | R.FR-26                             | Full depth shoulders for truck usage on key freeways and arterials)   |  |  |  |  |
| Various            | R.FR-27                             | Traveler Information System (TIS) on SR 167 for I-405 "options"   |  |  |  |  |
| Various            | R.FR-28                             | TIS on I-5 for SR 18/I-90; and 164th to I-405; and South 200th to I-405   |  |  |  |  |
| Various            | R.FR-29                             | Centralized fax/radio for real time congestion reporting for dispatchers and truck drivers. Leverage WSDOT video linkages (e.g., a "T-911" number). |  |  |  |  |
| Various            | R.FR-30                             | Hours of operation and service periods optimized—"JIT" redefined for applicable service sectors (e.g. restaurants)                                  |  |  |  |  |
| Various            | R.FR-32                             | Light cargo delivery using Sound Transit service  |  |  |  |  |

# **APPENDIX B Alternatives Project Matrix**

|       |                      | <u> </u>                 |  | Alternatives |          |   |            |                     |  |
|-------|----------------------|--------------------------|--|--------------|----------|---|------------|---------------------|--|
|       | Jurisdiction         | ACTIONS                  |  |              | 1        | 2   | 3          | 4                   |  |
| Eleme | ent #                |                          |  | No Action    | HCT/TDM  | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
|       |                      |                          |  |              |          |   |            |                     |  |
|       |                      |                          |  |              |          |   |            |                     |  |
| 10.   | Basic I-405 Improvem | <u> </u>                 |  |              |          |   |            |                     |  |
|       | Renton               | R.BI-1 & R.FR-10         | SR 167 Interchange - Direct Connection with auxiliary lane SB SR 169 to SR 167                               |              | ✓        | ✓   | ✓          | ✓                   |  |
|       | Kirkland             | R.BI-2                   | Continue NB climbing Lane from NE 70th to NE 85th and continue as auxiliary Lane to NE 116th                 |              | <b>√</b> | <b>√</b>                                      |            | ✓                   |  |
|       | Kirkland             | R.BI-3                   | SB auxiliary Lane NE 124th to NE 85th  |              | <b>√</b> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Bellevue             | R.BI-4                   | I-90 / Coal Creek Interchange  |              | <b>√</b> | <b>√</b>                                      | ✓          | <b>√</b>            |  |
|       | Both,King Co,Kirk    | R.BI-5                   | SB SR 522 to 124th continue climbing lane as an auxiliary lane   |              | <b>√</b> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Bothell              | R.BI-6                   | NB auxiliary lane SR 522 to SR 527   |              | <b>/</b> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Renton               | R.BI-7                   | Kennydale Hill climbing lane - SR 900 to 44th - NB 900 to 30th, SB 44th - 30th                               |              | ✓        | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Bellevue             | R.BI-8                   | I-90 to Bellevue SB HOV direct connection to I-90 west   |              | <b>√</b> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Bellevue             | R.BI-9                   | NB auxiliary lane I-90 to NE 8th   |              | <b>√</b> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Bellevue             | R.BI-10                  | Increase SR 405 to Eastbound SR 520 Ramp capacity  |              | <b>√</b> | <b>√</b>                                      |            |                     |  |
|       | Renton               | R.BI-14                  | NB Auxilliary Lane I-5 to SR 167   |              | <i>\</i> | <b>√</b>                                      |            | <b>√</b>            |  |
|       | Various              | R.FR.24                  | Improve interchange geometrics at all major truck routes (WB-20 Design Criteria)                             |              | <i>,</i> | <b>/</b>                                      | ✓          |                     |  |
|       |                      |                          |  |              |          |   |            |                     |  |
| 10.   | Committed Freeway I  | •                        |  |              |          |   |            |                     |  |
|       | Joint                | R-17 & R-17(17)          | I-90/SR 900 Interchange and SR 900 improvements/Interchange reconfiguration Outside of Study Area            |              |          |   |            |                     |  |
|       | Joint                | R-19                     | I-90/Sunset Way Interchange/Complete interchange and upgrade nonmotorized connections. Outside of Study Area |              |          |   |            |                     |  |
|       | WSDOT                | R-55                     | I-405/SR 167 Interchange/Construct new southbound I-405-to-southbound SR 167 ramp modification.              | ✓            | ✓        | ✓   | ✓          | ✓                   |  |
|       |                      |                          |  |              |          |   |            |                     |  |
|       | SR 405 Through Capa  | acity (TC)               |  |              |          |   |            |                     |  |
|       |                      |                          |  |              |          |   |            |                     |  |
| 11.   | Two additional GP la |                          |  |              |          |   |            |                     |  |
|       | Tukwila,Renton       | R.TC-1                   | Two additional GP lanes in each direction - SR 5 Tukwila to SR 167   |              |          |   | ✓          |                     |  |
|       | Renton               | R.TC-2                   | Two additional GP lanes in each direction - SR 167 to SR 900/North Renton I/C                                |              |          |   | ✓          |                     |  |
|       | Renton, Nwcas,Bel    | R.TC-3                   | Two additional GP lanes in each direction - SR 900/North Renton I/C to SR 90                                 |              |          |   | ✓          |                     |  |
|       | Bellevue             | R.TC-4                   | Two additional GP lanes in each direction - SR 90 To SR 520  |              |          |   | ✓          |                     |  |
|       | Bellevue,Kirkland    | R.TC-5                   | Two additional GP lanes in each direction - SR 520 to NE 70th  |              |          |   | ✓          |                     |  |
|       | Kirkland             | R.TC-6                   | Two additional GP lanes in each direction - NE 70th to NE 124th  |              |          |   | ✓          |                     |  |
|       | Kirk,K C,Both        | R.TC-7                   | Two additional GP lanes in each direction - NE 124th SR 522  |              |          |   | ✓          |                     |  |
|       | Bothell,Sno Co       | R.TC-8                   | Two additional GP lanes in each direction - SR 522 to SR 527   |              |          |   | ✓          |                     |  |
|       | Sno Co               | R.TC-9                   | Two additional GP lanes in each direction - SR 527 to SR 5 Swamp Creek                                       |              |          |   | ✓          |                     |  |
|       |                      |                          |  |              |          |   |            |                     |  |
| 13.   | •                    | es each direction betwee | , ,  |              |          |   |            |                     |  |
|       | Tukwila,Renton       | R.TC-20 + R.TC-29a       | Add Express lanes - SR 5 Tukwila to SR 167   |              |          |   |            | ✓                   |  |
|       | Renton               | R.TC-21                  | Add Express lanes - SR 167 to SR 900 North Renton  |              |          |   |            | ✓                   |  |
|       | Ren, Nwcas,Bel       | R.TC-22 + R.TC-33        | Add Express lanes -SR 900 North Renton I/C to SR 90  |              |          |   |            | ✓                   |  |
|       | Bellevue             | R.TC-23                  | Add Express lanes - SR 90 to SR 520  |              |          |   |            | ✓                   |  |
|       | Bellevue,Kirkland    | R.TC-24 + R.TC-32        | Add Express lanes - SR 520 to NE 70th  |              |          |   |            | ✓                   |  |
|       | Kirkland             | R.TC-25                  | Add Express lanes - NE 70th to NE 124th  |              |          |   |            | ✓                   |  |
|       | Kirk,K C,Both        | R.TC-26 + R.TC-31        | Add Express lanes - NE 124th to SR 522   |              |          |   |            | ✓                   |  |
|       | Bothell,Sno Co       | R.TC-27                  | Add Express lanes - SR 522 to SR 527   |              |          |   |            | ✓                   |  |
|       | Sno. Co              | R.TC-29 + R.TC-30        | Add Express Lanes - SR 527 to SR 5 Swamp Creek   |              |          |   |            | <b>✓</b>            |  |
|       | Renton               | R.TC-28                  | Add Express lanes- on SR 167 north of 180th up to I-405  |              |          |   |            | <b>√</b>            |  |
|       |                      |                          |  |              |          |   |            |                     |  |

|          |                                   |                                       |   | Alternatives |         |   |            |                     |  |
|----------|-----------------------------------|---------------------------------------|---|--------------|---------|---|------------|---------------------|--|
|          | Jurisdiction                      | ACTIONS                               |   | 5            | 1       | 2   | 3          | 4                   |  |
| Eleme    | lement #                          |                                       |   | No Action    | HCT/TDM | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
| 13.      | Express Lanes - Acc               | cess Locations                        |   |              |         |   |            |                     |  |
|          | Tuk & Renton                      | R.TC-29a & R.TC-20                    | Southern end to Express lanes - Between SR 181 and SR 167   |              |         |   |            | <b>√</b> *          |  |
|          | Snohomish Co                      | R.TC-30 & R.TC-29                     | Northern end to Express lanes - Between SR 527 and I-5  |              |         |   |            | <b>√</b> *          |  |
|          | King Co,Kirkland                  | R.TC-31 & R.TC-26                     | Slip Ramp- South of NE 160th St   |              |         |   |            | <b>√</b> *          |  |
|          | Kirkland                          | R.TC-32 & R-TC-24                     | Slip Ramp- South of NE 70th St  |              |         |   |            | <b>√</b> *          |  |
|          | Bellevue, Newcast                 | tle R.TC-33 & R.TC-22                 | Slip Ramp- South of Coal Creek Pkwy   |              |         |   |            | <b>√</b> *          |  |
|          | Renton                            | R.TC-34                               | Interchange access location- SR 167   |              |         |   |            | ✓                   |  |
| 14.      | Widon SD 167 h                    | y 1 lane each direction               | n to study Area boundary  |              |         |   |            |                     |  |
| 14.      | Renton, Kent                      | R.CF-8                                | SR 167 I-405 to Study Area Boundary   | 1            |         | <b>√</b>                                      | 1          |                     |  |
|          | Memon, Nem                        | N.OI -0                               | OK 107 1-100 to Olduy Alea Doulluary  |              |         | <b>-</b>                                      | <b>-</b>   | <b>√</b>            |  |
| 144      | CD 167 / L 405 last               | torohanga Immenia                     | nto.  |              |         |   |            |                     |  |
| 14A.     | Renton                            | R.FR-10 & R.BI-1                      |   | 1            |         | <b>√</b> *                                    | <b>√</b> * | <b>√</b> *          |  |
|          | Kenton                            | N.CK-10 & K.DI-1                      | SR 167/I-405 Interchange Add Directional Ramps for major movements  |              |         | V A   | <b>√</b> ↑ | <b>√</b> ↑          |  |
| 16.      | Connecting Freeway                | V Capacity (Matched to fit I          | -405 Improvements)  |              |         |   |            |                     |  |
|          | Tuikwila                          | R.CF-1                                | SR 518 I-405 to SR 99/Airport Access  |              |         | 1   | 1          | 1                   |  |
|          | Bellevue                          | R.CF-3                                | I-90 South Bellevue to Eastgate   |              |         | •   | 1          |                     |  |
|          | Bellevue                          | R.CF-4                                | SR 520 Bellevue Way to 148th  |              |         |   | -          | <u> </u>            |  |
|          | Bothell, Woodin                   | R.CF-5                                | SR 522 Bothell to NE 195th  |              |         | 1   | 1          |                     |  |
|          | Sno Co, Lynnwood                  |                                       | SR 525 I-405 to SR 99   |              |         | 1   | 1          |                     |  |
|          | Tukwila                           | R.CF-9                                | I-5 at Tukwila  |              |         | 1   | 1          | <u> </u>            |  |
|          | Lynnwood                          | R.CF-10                               | I-5 at Swamp Creek - 44th to 155th  |              |         | √   | √          | <u>√</u>            |  |
|          |                                   |                                       |   |              |         |   |            |                     |  |
| 10A.     | One additional GP o               | r Auxiliary lane in each dir          | ection  |              |         |   |            |                     |  |
|          | Tukwila,Renton                    | R.TC-9                                | One additional GP lanes in each direction - SR 5 Tukwila to SR 167  |              |         | ✓   |            | ✓                   |  |
|          | Renton                            | R.TC-10                               | One additional GP lanes in each direction - SR 167 to SR 900/North Renton I/C   |              |         | ✓   |            | ✓                   |  |
|          | Ren, Nwcas,Bel                    | R.TC-11                               | One additional GP lanes in each direction - SR 900/North Renton I/C to SR 90  |              |         | ✓   |            | ✓                   |  |
|          | Bellevue                          | R.TC-12                               | One additional GP lanes in each direction - SR 90 To SR 520   |              |         | ✓   |            | ✓                   |  |
|          | Bellevue,Kirkland                 | R.TC-13                               | One additional GP lanes in each direction - SR 520 to NE 70th (Varify need for additional through capacity on this section)                 |              |         | ✓   |            | ✓                   |  |
|          | Kirkland                          | R.TC-14                               | One additional GP lanes in each direction - NE 70th to NE 124th   |              |         | ✓   |            | <b>√</b>            |  |
|          | Kirk,K C,Both                     | R.TC-15                               | One additional GP lanes in each direction - NE 124th SR 522   |              |         | 1   |            | <b>√</b>            |  |
|          | Bothell,Sno Co                    | R.TC-16                               | One additional GP lanes in each direction - SR 522 to SR 527  |              |         | 1   |            | <b>√</b>            |  |
|          | Sno. Co                           | R.TC-17                               | One additional GP lanes in each direction - SR 527 to SR 5 Swamp Creek  |              |         | ✓   |            | ✓                   |  |
| 40       | Arterial Canacity (A)             | C) Actions                            |   |              |         |   |            |                     |  |
| 18.      | Arterial Capacity (At<br>King Co  | R.AC-2 & R-39                         | 129th Ava - Patrovitalas Pd to SP 160 Add 1 long Soc P 20   |              |         |   |            |                     |  |
|          | . •                               |                                       | 138th Ave - Petrovitsky Rd to SR 169- Add 1 lane. See R-39  | 1            |         |   | 1          | ,                   |  |
|          | King Co, Renton<br>Ren, Nwcas,Bel | R.AC-3<br>R.AC-4                      | 138th Ave SE - Construct roadway link to 4/5 lanes- SR 169 to NE 4th St  140th Ave/Coal Creek Pkwy- Widen to 6 lanes to I-405               |              |         |   | <b>√</b>   | <b>√</b>            |  |
|          | Redmond                           | R.AC-4                                | Willows Rd- NE 90th St to NE 124th St- Add 1 lane each direction  |              |         |   |            | <b>√</b> *          |  |
|          | King Co, Woodin                   | R.AC-15 & R-111                       | Willows Rd- NE 90th St to NE 124th St- Add 1 lane each direction  Willows Rd- NE 124th St to NE 145th St- construct new facility -4/5 lanes |              |         |   | 1          | <u>√ ↑</u>          |  |
| $\vdash$ | Woodinville                       | R.AC-16<br>R.AC-17 & R.PA-28          | SR 202- NE 145th St to SR 522- widen to 5 lanes   |              |         |   | <b>√</b> * | <b>✓</b> *          |  |
| -        | Red,K C,Woodin                    | R.AC-17 & R.PA-28                     | SR 202 - NE 145th St to SR 522- widen to 5 lanes  SR 202 - NE 90th to NE 145th  |              |         |   | <b>√</b> ↑ | ✓ *                 |  |
|          | Red, K C, Woodin                  | R.AC-18 & R.PA-28<br>R.AC-19 & R.IC-5 | SR 202 - NE 90th to NE 145th  SR 900 - SR 405 to Edmonds. Additional capacity is not needed   |              |         |   |            | <b>√</b> ↑          |  |
| ,        | Both,S C,Mill Cr                  | R.AC-19 & R.IC-5                      | SR 527/Bothell Everett Hwy - SR 522 to SR 524 - Widen by 1 lane each direction  |              |         |   |            |                     |  |
|          | Both, Woodin                      | R.AC-20<br>R.AC-30 & R.PA-25          | SR 202 connection across SR 522 to 120th  | 1            |         |   | <b>√</b> * |                     |  |
|          | Bothell                           | R.AC-34                               | 120th Ave NE - SR 522 to NE 195th ( 4 Ins existing additioal not needed)  | _            |         |   | V T        | V T                 |  |

|          |                     |                               |  | Alternatives |          |   |            |                     |  |
|----------|---------------------|-------------------------------|--|--------------|----------|---|------------|---------------------|--|
|          | Jurisdiction A      | CTIONS                        |  | 5            | 1        | 2   | 3          | 4                   |  |
| Elemei   | nt#                 |                               |  | No Action    | HCT/TDM  | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
|          | Tukwila             | R.AC-35                       | SR 181- S 180th to S 200th   |              |          |   |            | ✓                   |  |
|          | Tukwila             | R.AC-36& R.IC-3               | SR 181- 144th to Strander Blvd.  |              |          |   |            | √ *                 |  |
|          | Tukwila             | R.AC-37                       | Southcenter Pky - Tukwila Pky to Strander Blvd   |              |          |   |            | ✓                   |  |
|          |                     |                               |  |              |          |   |            |                     |  |
| 19.      |                     | provements (Matched to        |  |              |          |   |            |                     |  |
|          | Tukwila             | R.IC-3 & R.AC-36              | SR 181 West Valley Highway/ Interurban See R.AC-36   |              |          | ✓   | ✓          | ✓                   |  |
|          | Renton              | R.IC-4 & R.HOV-43             | SR 169 Maple Valley Hwy SR 900 to NE 5th See R.HOV-43  |              |          | <b>√</b> *                                    | √*         | ✓                   |  |
|          | Renton              | R.IC-5 & R.AC-19              | SR 900/ Park - Lake Washington Blvd to Edmonds. Additional capacity is not needed.   |              |          |   |            |                     |  |
|          | Bellevue            | R.IC-6                        | Coal Creek Pkwy I-405 to Factoria Blvd.  | ✓            | √        | ✓   | ✓          | ✓                   |  |
|          | Kirkland, Redmond   | R.IC-8                        | NE 85th St-Kirkland Way to 124th   |              |          | ✓   | ✓          | ✓                   |  |
|          | Kirkland            | R.IC-9                        | NE 116th- 114th Ave NE to 124th Ave NE   |              |          | ✓   | ✓          | ✓                   |  |
|          | Kirkland            | R.IC-10                       | NE 124th- 113th Ave NE to 124th Ave NE   |              |          | ✓   | ✓          | ✓                   |  |
|          | Bothell             | R.IC-11 & R.HOV-41            | SR 527-228th to SR 524   |              |          | ✓   | ✓          | ✓                   |  |
|          | Renton              | R.IC-12 & R.HOV-33            | Port Quendall overpass at SE 44th. See R.HOV-33  |              |          |   |            |                     |  |
|          | Kirk,King Co        | R.IC-14                       | New half diamond interchange to/from north at NE 132nd St  |              |          |   | ✓          | ✓                   |  |
|          | Bothell             | R.IC-21                       | New SR 405 Interchange at 240th Street SE(Bothell)   |              |          |   | ✓          | ✓                   |  |
|          | Bothell             | R.IC-24 & R-40                | NE 160th Street-112th Ave to Juanita/Woodinville Wy See R-40   |              |          | <b>√</b> *                                    | √*         | <b>√</b> *          |  |
|          | Bothell             | R.!C-25                       | NE 195th Street-Ross Rd to North Creek Pkwy (additional capacity not needed)   |              |          |   |            |                     |  |
|          | Kirkland            | R.IC-26 & R.PA-13             | NE 132nd - 113th to 124th Ave NE   |              |          |   | √*         | √*                  |  |
|          |                     |                               |  |              |          |   |            |                     |  |
| 12.      |                     | CD) Matched to fit I-405 I    | ·  |              |          |   |            |                     |  |
|          | Renton              | R.CD-1                        | SR-167, SR-169, Sunset and SR 900/North Renton;  |              |          |   |            |                     |  |
|          | Bellevue            | R.CD-2                        | Coal Creek, SR 90, SE 8th, NE 4th, NE 8th and SR 520;  |              |          |   |            |                     |  |
|          | Kirkland            | R.CD-3                        | NE 70th and NE 85th;   |              |          |   |            |                     |  |
|          | Kirkland            | R.CD-4                        | NE 116th and NE 132nd;   |              |          |   |            |                     |  |
|          | Bothell, King Co    | R.CD-5                        | NE 160th, SR-522 and SR 527  |              |          |   |            |                     |  |
|          | HOV (HOV)           |                               |  |              |          |   |            |                     |  |
|          | 1104 (1104)         |                               |  |              |          |   |            |                     |  |
| 7.       | Committed HOV Proje | ects                          |  |              |          |   |            |                     |  |
|          | Bellevue            | HOV-01                        | I-405 at NE 4th/6th/8th (Bellevue) / Construct new HOV direct access at NE 6th, Improve arterial capacity at NE 4th/8th interchanges | ✓            | <b>√</b> | ✓   | ✓          | ✓                   |  |
|          | Bellevue            | HOV-02                        | I-90 (Eastgate) / New I-90 HOV direct access connection to P&R   | <b>√</b>     | <b>√</b> | <b>√</b>                                      | <b>√</b>   | <b>√</b>            |  |
|          | WSDOT               | HOV-14                        | I-405 (I-5 Swamp Creek to SR 527)/Construct NB and SB HOV lanes total 6 lanes  | 1            | 1        | 1   | 1          | 1                   |  |
|          | KCDOT               | HOV-15                        | E Lk Samm Pkwy (Iss-Fall City Rd to I-90 on ramp)/Widen to 4/5 lanes + HOV lanes. Outside of Study Area                              |              |          |   |            | •                   |  |
|          | ST                  | HOV-101                       | I-405 @ Lind/HOV direct access improvements.   |              |          |   | 1          |                     |  |
|          | ST                  | HOV-102, R.HOV-58 &<br>R.PA-1 | Woodinville Arterial Enhancements/HOV arterial enhancements  | ✓            | ✓        | ✓   | √ ·        | ✓                   |  |
|          | Renton              | R.HOV-32                      | Between Sunset and SR-900 /Park Ave interchange in Renton  | 1            | 1        | 1   | 1          | <b>√</b>            |  |
|          | Renton              | R.HOV-33 & R.IC-12            | NE 44th I/C - HOV Direct Access and Arterial Improvements(Assumes Port Quendall)   | 1            | 1        | <i>'</i>                                      | 1          | <u>√</u>            |  |
|          | Kirkland            | R.HOV-61                      | NE 85th  |              | -        | -   | 1          | -                   |  |
| $\vdash$ | Bothell             | R.HOV-62                      | SR 522 Campus Access   | 1            | 1        | 1   | <i>'</i>   | J                   |  |
|          | Bothell             | R.HOV-63                      | SR 527   | 1            | 1        | 1   | 1          | <u> </u>            |  |
|          | Tukwila             | R.HOV-64                      | Southcenter (In-Line Station). In line station at this location has been dropped.  | •            | <b>-</b> | ,   |            |                     |  |
|          | · a.tma             | ,                             | ,  |              |          |   |            |                     |  |
|          | ST                  | R.HOV-66                      | I-405 at NE 128th St/HOV Direct Access Improvements  | ✓            | ✓        | ✓   | ✓          | ✓                   |  |

| Alternativ |                       |                               |   |           |            | Alternatives                                  | ives       |                     |  |
|------------|-----------------------|-------------------------------|---|-----------|------------|---|------------|---------------------|--|
|            | Jurisdiction          | ACTIONS                       |   | 5         | 1          | 2   | 3          | 4                   |  |
| Eleme      |                       |                               |   | No Action | HCT/TDM    | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
| 7.         | HOV Interchange Ra    |                               |   |           |            |   |            | <b></b>             |  |
|            | Tukwila               | R.HOV-25                      | SR 5 I/C @ Tukwila Fwy to Fwy HOV ramps,  |           |            | ✓   | √          | ✓                   |  |
|            | Renton                | R.HOV-26                      | SR 167 I/C Fwy to Fwy HOV ramps,  |           |            | ✓   | √          | ✓                   |  |
|            | Bellevue              | R.HOV-27                      | SR 90 I/C Fwy to Fwy HOV ramps,   |           |            | ✓   | ✓          | ✓                   |  |
|            | Bellevue              | R.HOV-28                      | SR 520 Fwy to Fwy HOV ramps,  |           |            | ✓   | ✓          | ✓                   |  |
|            | Bothell               | R.HOV-29                      | SR 522 Fwy to Fwy HOV Ramps   |           |            | ✓   | <b>√</b>   | ✓                   |  |
|            | Sno. Co.              | R.HOV-30                      | SR 5 I/C @ Swamp Creek Fwy HOV ramps.   |           |            | ✓   | ✓          | ✓                   |  |
|            | Newcastle             | R.HOV-65                      | 112th St SE (In-Line Station)   |           |            | <b>√</b>                                      |            |                     |  |
| 6.         | Arterial HOV          |                               |   |           |            |   |            |                     |  |
|            | Bellevue              | R.HOV-36                      | Coal Creek Pkwy from I-405 to Forest Drive  |           | 1          | <b>√</b>                                      | <b>√</b>   |                     |  |
|            | Bellevue              | R.HOV-37                      | NE 8th Street from I-405 to 120th Ave NE  | 1         | 1          | <i>'</i>                                      | · /        |                     |  |
|            | Kirk, Redmond         | R.HOV-38                      | NE 85th St from Kirkland Way to 148th Ave NE Vicinity   |           | <i>'</i>   | <i>'</i>                                      | <i>'</i>   |                     |  |
|            | Kirkland              | R.HOV-39                      | NE 116th from 115th Ave NE to 124th Ave NE  |           | <i>-</i>   | <i>'</i>                                      | <i>'</i>   |                     |  |
|            | Kirkland              | R.HOV-40                      | NE 124th from 113th Ave NE to 132 Ave NE  |           | 1          | 1   | 1          |                     |  |
|            | Bothell               | R.HOV-41 & R.IC-11            | SR 527 From SE 228th St to SR 524   |           | <i>'</i>   | <b>√</b> *                                    | <b>√</b> * |                     |  |
|            | Renton                | R.HOV-43 & R.IC-4             | SR 169 from SR 405 to Riverview Park Vicinity - HOV/Transit Preferential treatment.   |           | 1          | √ ·   | √ ·        |                     |  |
|            | Renton                | R.HOV-44                      | SW 27th St Corridor in Renton from Oaksdale Ave to SR 167   |           | 1          | · /   | 1          |                     |  |
|            | Redmond               | R.HOV-47                      | Avondale Rd from Novelty Hill Rd to Avondale Way/ Construct SB HOV lane   |           | 1          | 1   | 1          |                     |  |
|            | Renton, King Co       | R.HOV-48                      | SW 43 St from SR 167 to 140 Ave SE  |           | 1          | 1   | 1          |                     |  |
|            | Renton                | R.HOV-49                      | Logan Ave N/N 6 St from S 3 St to Park Dr, Transit Signal Priority  |           | 1          | 1   | 1          |                     |  |
|            | Renton                | R.HOV-51                      | Park Dr/Sunset Blvd from Garden Ave to Duvall Ave NE, Que Bypass'   |           | 1          | 1   | 1          |                     |  |
|            | Kenmore               | R.HOV-53 & R.PA-11            | 68 Ave NE (Simonds Rd to SR 522) - Construct NB HOV lane  |           | 1          | · /   | 1          |                     |  |
|            | Redmond               | R.HOV-55                      | Willows Rd (Redmond Wy to NE 124 St)  |           | 1          | 1   | 1          |                     |  |
|            | Kirkland, Bellevue    | R.HOV-56                      | Lake Washington Blvd (SR 520 to Yarrow Bay) - HOV lanes   |           | 1          | 1   | 1          |                     |  |
|            | Kirkland              | R.HOV-57                      | NE 68 St/NE 72 PI (I-405 Vicinity) Que Bypass'  |           | 1          | 1   | 1          |                     |  |
| ,          | Bothell, Woodin       | R.HOV-58, HOV-102 &<br>R.PA-1 | SR 522 (I-405 to SR 527 - Bothell) WB HOV Que Bypass - See HOV-102  |           |            |   |            |                     |  |
|            | Renton, King Co       | R.HOV-59                      | Benson Rd - I-405 to SE Carr Rd - No Project  |           |            |   |            |                     |  |
|            | Bellevue              | R.HOV-60                      | Bellevue Way - I-90 to South Bellevue Park and Ride Vicinity  |           | ✓          | ✓   | ✓          |                     |  |
|            | Facility (F)          |                               |   |           |            |   |            |                     |  |
| 23.        | Freight (F)           | D ED 40 9 D DI 4              | Madify CD 467 Intershapes for Foot to Couth Freight may re-   | 1         | ( )        | / sla   | / 44       |                     |  |
|            | Renton<br>Various     | R.FR-10 & R.BI-1<br>R.FR-11   | Modify SR 167 Interchange for East to South Freight movements  Improve truck flow with ITS  | 1         | <b>√</b> * | <b>√</b> *                                    | <b>√</b> * |                     |  |
|            |                       |                               | '   |           | <b>√</b>   | <i>\</i>                                      | <b>√</b>   | 1                   |  |
|            | Various               | R.FR-23                       | Remote area for overnight freight parking and staging for early morning deliveries  | 1         | <b>√</b>   | <b>√</b>                                      | <b>√</b>   |                     |  |
|            | Various<br>Various    | R.FR-26<br>R.FR-27            | Full depth shoulders for truck usage on key freeways and arterials)   | 1         | <b>√</b>   | √<br>/  | <b>√</b>   |                     |  |
|            |                       |                               | Traveler Information System (TIS) on SR 167 for I-405 "options"   | 1         | <i>J</i>   | <i>J</i>                                      | √<br>√     |                     |  |
|            | Various<br>Various    | R.FR-28<br>R.FR-29            | TIS on I-5 for SR 18/I-90; and 164th to I-405; and South 200th to I-405  Centralized fax/radio for real time congestion reporting for dispatchers and truck drivers. Leverage WSDOT video | 1         | 1          | <i>J</i>                                      | √<br>√     |                     |  |
|            |                       |                               | linkages (e.g., a "T-911" number).  |           |            |   |            | <u> </u>            |  |
|            | Various               | R.FR-30                       | Hours of operation and service periods optimized—"JIT" redefined for applicable service sectors (e.g. restaurants)  |           | ✓          | ✓   | √          | <u> </u>            |  |
|            | Various               | R.FR-32                       | Light cargo delivery using Sound Transit service  |           | ✓          | ✓   | ✓          | 1                   |  |
| 22.        | Intelligent Transport | ation Systems (ITS)           |   |           |            |   |            | <u> </u>            |  |
|            | Various               | ITS-1                         | Add Camera Coverage to decrease TMC blind spots   | 1         | 1          | 1   | <b>√</b>   | <b>√</b>            |  |
|            | Various               | ITS-2                         | Complete Ramp Metering  | İ         | · ✓        | <b>√</b>                                      | √ ·        | √                   |  |
|            | Various               | ITS-4                         | Dual Lane Ramp Metering   | 1         | 1          | <b>√</b>                                      | <b>√</b>   | <b>√</b>            |  |

|           | 3                      |                       |   | Alternatives |          |   |            |                     |  |
|-----------|------------------------|-----------------------|---|--------------|----------|---|------------|---------------------|--|
|           |                        | A CONTROLLO           |   |              |          |   |            |                     |  |
|           | Jurisdiction           | ACTIONS               |   | 5            | 1        | 2   | 3          | 4                   |  |
| Element # |                        |                       |   | No Action    | HCT/TDM  | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
|           | Various                | ITS-5                 | Increased Incident Response   |              | ✓        | ✓   | ✓          | ✓                   |  |
|           | Various                | ITS-6                 | Traffic adaptive control on arterials                                     |              | ✓        | ✓   | <b>✓</b>   | ✓                   |  |
|           | Various                | ITS-7                 | TIS before all major decision points                                      |              | ✓        | ✓   | <b>✓</b>   | ✓                   |  |
|           | Various                | ITS-8                 | WSDOT support of in-vehicle traffic information                           |              | ✓        | ✓   | ✓          | ✓                   |  |
|           | Various                | ITS-9                 | Arterial camera coverage  |              | 1        | ✓   | ✓          | ✓                   |  |
|           |                        |                       |   |              |          |   |            |                     |  |
|           |                        |                       |   |              |          |   |            |                     |  |
| 4. H      | igh Capacity Trans     | it (Physically Separa | ated, Fixed Guideway HCT)   |              |          |   |            |                     |  |
|           | Tuk. & Renton          | T.HCT-1               | HCT- SeaTac to Renton CBD   |              | 1        | 1   |            |                     |  |
|           | Renton                 | T.HCT-2               | HCT-Renton CBD to NE 44th (Port Quendall)                                 |              | 1        | 1   |            |                     |  |
|           | Ren< New & Bel         | T.HCT-3               | HCT- NE 44th (Port Quendall) to Factoria                                  |              | 1        | 1   |            |                     |  |
| $\vdash$  | Bell & Issa            | T.HCT-4               | HCT - Factoria To Issaguah  | 1            | 1        | <i>y</i>                                      |            |                     |  |
|           |                        |                       | · · · · · · · · · · · · · · · · · · ·                                     |              | -        | <i>J</i>                                      |            |                     |  |
|           | Bellevue<br>Bell & Red | T.HCT-5<br>T.HCT-6    | HCT Factoria to Downtown Bellevue HCT - Bellevue to Redmond               | 1            | 1        | 1   |            |                     |  |
|           |                        |                       |   |              | · ·      | ·   |            |                     |  |
|           | Bell & Kirk            | T.HCT-7               | HCT- Bellevue to Totem Lake   |              | <b>√</b> | <b>√</b>                                      |            |                     |  |
|           | Kirk & King Co         | T.HCT-8               | HCT - Totem Lake to Bothell   |              | <b>√</b> | <b>√</b>                                      |            |                     |  |
|           | Various                | T.HCT-9               | HCT - Bothell to Lynnwood   |              | ✓        | ✓   |            |                     |  |
|           |                        |                       |   |              |          |   |            |                     |  |
|           |                        |                       |   |              |          |   |            |                     |  |
| 4. H      | igh Capacity Trans     |                       | [BRT] operating improved access HOV lanes on the existing freeway system) |              |          |   |            |                     |  |
|           | Tuk. & Renton          | T.HCT-1               | HCT- SeaTac to Renton CBD   |              |          |   | ✓          |                     |  |
|           | Renton                 | T.HCT-2               | HCT-Renton CBD to NE 44th (Port Quendall)                                 |              |          |   | <b>✓</b>   |                     |  |
|           | Ren< New & Bel         | T.HCT-3               | HCT- NE 44th (Port Quendall) to Factoria                                  |              |          |   | <b>✓</b>   |                     |  |
|           | Bell & Issa            | T.HCT-4               | HCT - Factoria To Issaquah  |              |          |   | ✓          |                     |  |
|           | Bellevue               | T.HCT-5               | HCT Factoria to Downtown Bellevue   |              |          |   | ✓          |                     |  |
|           | Bell & Red             | T.HCT-6               | HCT - Bellevue to Redmond   |              |          |   | ✓          |                     |  |
|           | Bell & Kirk            | T.HCT-7               | HCT- Bellevue to Totem Lake   |              |          |   | 1          |                     |  |
|           | Kirk & King Co         | T.HCT-8               | HCT - Totem Lake to Bothell   |              |          |   | 1          |                     |  |
|           | Various                | T.HCT-9               | HCT - Bothell to Lynnwood   |              |          |   | 1          |                     |  |
|           |                        |                       |   |              |          |   |            |                     |  |
| 4. Hi     | gh Capacity Transi     | t Stations            |   | 1            |          |   |            |                     |  |
|           | Sea-Tac                | HCT.TS-1              | Sea-Tac (Outside of Study Area)   |              |          |   |            |                     |  |
|           | Tukwila                | HCT.TS-2              | Southcenter   |              | 1        | 1   | 1          |                     |  |
|           | Tukwila & Renton       | HCT.TS-3              | Tukwila (Longacres)   | 1            | 1        | 1   | <b>– •</b> |                     |  |
| $\vdash$  | Renton                 | HCT.TS-4              | Downtown Renton   | 1            | <b>1</b> | <i>J</i>                                      |            |                     |  |
|           | Renton                 | HCT.TS-5              | North Renton  | <b>+</b>     | <b>√</b> | <i>J</i>                                      |            |                     |  |
|           | Renton                 | HCT.TS-6              | Port Quendall   | 1            | 1        | <b>V</b>                                      | 1          |                     |  |
|           |                        |                       |   | 1            | · ·      | <b>V</b>                                      |            |                     |  |
|           | Bellevue               | HCT.TS-7              | Factoria Pallace Transit Control  | 1            | <b>√</b> | √   | √          |                     |  |
|           | Bellevue               | HCT.TS-8              | Bellevue Transit Center   | 1            | 1        | √   | ✓          |                     |  |
|           | Bellevue               | HCT.TS-9              | Bellevue Library  | 1            | 1        | √   |            |                     |  |
|           | Bell & Kirk            | HCT.TS-10             | SR 520/Northup Way  |              | 1        | <b>√</b>                                      | <b>√</b>   |                     |  |
|           | Kirkland               | HCT.TS-11             | Downtown Kirkland (NE 85th Street)  |              | ✓        | ✓   | ✓          |                     |  |
|           | Kirkland               | HCT.TS-12             | Totem Lake  |              | ✓        | ✓   | ✓          |                     |  |
|           | Woodinville            | HCT.TS-13             | NE 145th Street   |              | ✓        | ✓   |            |                     |  |
|           | Woodinville            | HCT.TS-14             | Woodinville   |              | ✓        | ✓   |            |                     |  |
|           | Bothell                | HCT.TS-15             | NE 195th  |              |          |   | <b>✓</b>   | ·                   |  |

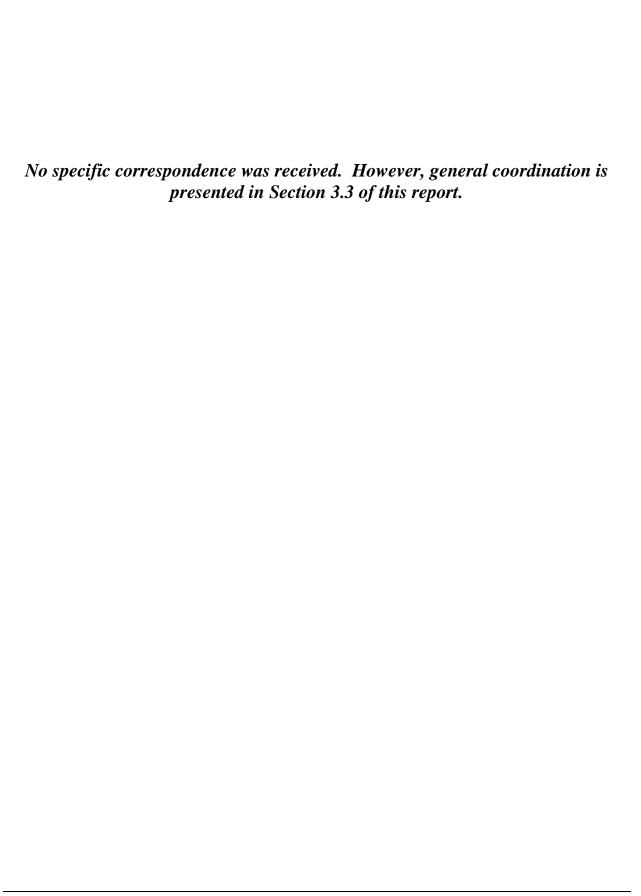
|      | <i>y</i>             |           |   | Alternatives |          |   |            |                     |  |
|------|----------------------|-----------|---|--------------|----------|---|------------|---------------------|--|
|      | T1-11-41             | ACTIONS   |   |              |          |   | 1 0        | 4                   |  |
|      | Jurisdiction         | ACTIONS   |   | 5            | 1        | 2   | 3          | 4                   |  |
| Elem | ement #              |           |   |              | HCT/TDM  | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |
|      | Bothell              | HCT.TS-16 | Canyon Park   |              | ✓        | ✓   | ✓          |                     |  |
|      | Sno County           | HCT.TS-17 | 164th Street AW (AshWay)  |              | ✓        | ✓   |            |                     |  |
|      | Bellevue             | HCT.TS-18 | Eastgate  |              | ✓        | ✓   | ✓          |                     |  |
|      | King County          | HCT.TS-19 | Lakemont  |              | ✓        | ✓   |            |                     |  |
|      | Issaquah             | HCT.TS-20 | Issaquah 9Outside of Study area)  |              |          |   |            |                     |  |
|      | Bellevue             | HCT.TS-21 | 132nd Avenue NE   |              | ✓        | ✓   |            |                     |  |
|      | Bellevue             | HCT.TS-22 | 148th Avenue NE   |              | ✓        | ✓   |            |                     |  |
|      | Redmond              | HCT.TS-23 | Overlake (NE 40th Street)   |              | ✓        | ✓   | ✓          |                     |  |
|      | Redmond              | HCT.TS-24 | Redmond Town Center   |              | ✓        | ✓   | ✓          |                     |  |
|      | Redmond              | HCT.TS-25 | Bear Creek  |              | ✓        | ✓   |            |                     |  |
|      | Mercer Island        | HCT.TS-26 | Mercer Island   |              | ✓        | ✓   | ✓          |                     |  |
| Now  | Transit Service (TS) |           |   | -            |          |   |            |                     |  |
| New  | Various              | TS-0      | Twenty percent more service than in the proposed 6-year plans for sound Transit, METRO and Community Transit  | <b>√</b>     | 1        | 1   | 1          | <b>√</b>            |  |
|      | Various              | TS-1      | Fifty percent more service assumed in the current 6-year plans for Sound Transit, METRO and Community Transit |              | ,        | •   | •          | · ✓                 |  |
|      |                      |           |   |              |          |   |            |                     |  |
| 3.   | Transit Service (TS) |           |   |              |          |   |            |                     |  |
|      | Various              | TS-2      | Twice the service in the proposed 6-year plans for Sound Transit, METRO and Community Transit                 |              | 1        | ✓   | ✓          |                     |  |
|      |                      |           |   |              |          |   |            |                     |  |
| 8.   | Park and Rides (PR)  | T.PR-3    | Renton Highlands  |              | /        | 1   | <b>√</b>   | 1                   |  |
|      | Tukwila & Ren        | T.PR-6    | Tukwila Commuter Rail (Longacres)   | <i>J</i>     | 1        | <b>√</b>                                      | <i>y</i>   | <b>√</b>            |  |
|      | K C                  | T.PR-8    | SR 169 and 140th Place SE   |              | <b>√</b> | <b>√</b>                                      | <i>y</i>   | <b>V</b>            |  |
|      | KC                   | T.PR-9    | Petrovitsky Rd and 157th Ave SE   |              | 1        | 1   |            |                     |  |
|      | KC                   | T.PR-9    | 140th Ave SE and SE 192nd   |              | <b>√</b> | <i>'</i>                                      | <i>\</i>   |                     |  |
|      | KC                   | T.PR-10   | SR 515 and SE 208th   |              | 1        | <i>y</i>                                      | <i>J</i>   |                     |  |
|      | Kent & Renton        | T.PR-11   | SR 167 and SW 43rd  |              | 1        | <b>V</b>                                      | <b>V</b>   |                     |  |
|      | Kent & Renton        | T.PR-12   | SR 167 and 84th Ave   |              | 1        | <b>√</b>                                      | √<br>✓     |                     |  |
|      | Redmond              | T.PR-13   | Willows Rd @ NE 100th   |              | 1        | <i>y</i>                                      | 1          |                     |  |
|      | Redmond              | T.PR-17   | SR 202 @ NE 100th   |              | 1        | <i>y</i>                                      | <i>J</i>   |                     |  |
|      | Bell & Kirk          | T.PR-18   | South Kirkland  | <b>√</b>     | 1        | <b>V</b>                                      | <i>J</i>   | <b>√</b>            |  |
|      | Redmond              | T.PR-20   | Overlake  | <i>J</i>     | <b>√</b> | 1   | 7          | <i>J</i>            |  |
|      | Bellevue             | T.PR-22   | South Bellevue  | <i>J</i>     | 1        | <b>1</b>                                      | <i>J</i>   | <i>J</i>            |  |
|      | Bellevue             | T.PR-23   | Newport (112th Ave. SE)   | <i>J</i>     | 1        | <i>'</i>                                      | 1          | <i>y</i>            |  |
|      | KC                   | T.PR-23   | NE 160th/Brickyard Rd   | <i>J</i>     | <b>√</b> | <b>√</b>                                      | √<br>√     | <i>J</i>            |  |
|      | Bothell              | T.PR-25   | Canyon Park (SR 405 and SR 527)   | <i>y</i>     | 1        | - /   | <i>J</i>   | <b>√</b>            |  |
|      | KC                   | T.PR-26   | SR 202 @ NE 145th   |              | <b>√</b> | 1   | 1          | <b>V</b>            |  |
|      | Tukwila              | T.PR-30   | Tukwila   | J            | 1        | /   | 1          | 1                   |  |
|      | Kirkland             | T.PR-31   | Houghton  | <i>y</i>     | 1        | <b>1</b>                                      | <i>J</i>   | <b>√</b>            |  |
| -    | Kirkland             | T.PR-32   | Kingsgate   | <i>J</i>     | <b>√</b> | <b>√</b>                                      | <i>y</i>   | <b>√</b>            |  |
|      | Medina               | T.PR-33   | Evergreen Point   | <b>V</b>     | 1        | 1   | <b>√</b>   | <b>√</b>            |  |
|      | Bellevue             | T.PR-34   | Wilburton   | <b>V</b>     | 1        | 1   | <i>J</i>   | <i>J</i>            |  |
|      | King County          | T.PR-35   | Lakemont  | <b>V</b>     | 1        | 1   | 1          | <i>J</i>            |  |
|      | Redmond              | T.PR-36   | Rendmond  | <i>J</i>     | 1        | - /   | 1          | <i>J</i>            |  |
|      | Redmond              | T.PR-37   | Bear Creek  | <b>V</b>     | 1        | <b>√</b>                                      | <b>√</b>   | <b>√</b>            |  |
|      | Bothell              | T.PR-38   | Bothell   | 1            | 1        | 1   | <b>V</b>   | <i></i>             |  |
|      |                      | 1 55      | = T-1   | 1            | <u> </u> | · ·   |            | •                   |  |

|           |                      |                      |  |           | Alternatives |   |            |                     |  |  |
|-----------|----------------------|----------------------|--|-----------|--------------|---|------------|---------------------|--|--|
|           | Jurisdiction         | ACTIONS              |  | 5         | 1            | 2   | 3          | 4                   |  |  |
| Element # |                      |                      |  | No Action | HCT/TDM      | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |  |  |
|           | Kenmore              | T.PR-39              | Northshore   | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Kenmore              | T.PR-40              | Kenmore  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Woodinville          | T.PR-41              | Woodinville  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Mercer Island        | T.PR-42              | Mercer Island  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Bellevue             | T.PR-43              | Eastgate   | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           |                      |                      |  |           |              |   |            |                     |  |  |
|           | Transit Centers (TC) |                      |  |           |              |   |            |                     |  |  |
|           | Renton               | T.TC-6               | Downtown Renton  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Bellevue             | T.TC-8               | Downtown Bellevue  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Redmond              | T.TC-9               | Overlake   | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Kirkland             | T.TC-12              | Downtown Kirkland  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Kirkland             | T.TC-14              | Totem Lake   | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           |                      |                      |  |           |              |   |            |                     |  |  |
|           | TDM (TDM)            |                      |  |           |              |   |            |                     |  |  |
|           | Various              | TDM-1                | TDM Package  |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           |                      | TDM-2                | Expanded TDM Package- Regional Congestion Pricing  |           | <b>√</b>     |   |            |                     |  |  |
|           | Pedestrian and Bicy  | cle Facilities (P&B) |  |           |              |   |            |                     |  |  |
| 1.        | I-405 Crossings      |                      |  |           |              |   |            |                     |  |  |
|           | Bellevue             | NM. CR-1             | Lk Washington Blvd/112th Ave. SE - crossing I-405 from 106th Ave. SE to 112th Place SE - Add sidewalks                             |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Bothell              | NM. CR-2             | Fitzgerald Rd/27th Ave crossing I-405 from 228th St. SE to 240th St. SE - Add ped/bike facility                                    |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | King County          | NM. CR-3             | SR-524 (Filbert Road) - crossing I-405 from North Rd to Locust Way - Add sidewalk/paved shoulder                                   |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Sno. County          | NM. CR-4             | Damson Road - crossing I-405 from 192nd St SW to Logan Rd - Add sidewalk/paved shoulder  |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Renton               | NM. CR-5             | NE Park Drive - crossing I-405 from SR-900/Sunset Blvd to Lake Wash Blvd - Add sidewalk/paved shoulder                             |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Renton               | NM. CR-6             | Jackson SW/Longacres Dr SW - crossing I-405 from S. Longacres Way to Monster Rd SW - Add sidewalk/paved shoulder                   |           | 1            | 1   | ✓          | ✓                   |  |  |
|           | Bothell              | NM. CR-7             | Connection between Sammamish River Trail and North Creek Trail - between SR-522 and NE 195th St Add ped/bike overcrossing of I-405 |           | <b>√</b>     | <b>√</b>                                      | ✓          | ✓                   |  |  |
|           | Bothell              | NM. CR-8             | SR-527 - crossing I-405 from 220th St SE to 228th St SE - ped/bike facility  |           | ✓            | ✓   | ✓          | ✓                   |  |  |
| 1.        | Pedestrian/Bicycle C |                      |  |           | _            | _   | _          |                     |  |  |
|           | Bellevue,Kirkland    | NM.P&B-2             | BNSF Right of Way - SE 8th to Totem Lake - Add ped/bike facility.  |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Bellevue             | NM.P&B-4             | Lk Washington Blvd - SR 405 to SE 60th - Add ped/bike facilities   |           | ✓            | 1   | ✓          |                     |  |  |
|           | Bothell              | NM.P&B-5             | North Creek Trail Link - 240th to 232nd - Add ped/bike trail.  |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Bel,Nwcas,Ren        | NM.P&B-6             | Lk Washington Blvd/112th - SE 60th to May Creek I/C - Add ped/bike facility  |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Renton               | NM.P&B-14            | Cedar River Trail S. Extension - I-405 to Burnett Ave - Add ped/bike facilities  |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Renton               | NM.P&B-15            | Cedar River Trail/Lake Washington Blvd Connector - Cedar River Trail to Lk Wash Blvd Loop - Add ped/bike facilities                |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Renton               | NM.P&B-16            | Cedar-Duwamish Trail Connection - I-405 to Interurban Ave. S Add ped/bike facilities   |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Renton               | NM.P&B-17            | I-405/SR-167 trail connection - Lind Ave. SE to Talbot Rd S Add trail connection   |           | ✓            | ✓   | ✓          |                     |  |  |
|           | Renton/Tukwila       | NM.P&B-18            | I-405/1-5 - via or around I-405/I-5 interchange - Add ped/bike facilities  |           | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Tukwila              | NM.P&B-19            | SR-181/W. Valley Hwy - crossing I-405 from Strander Blvd to Fort Dent Way - Add bike lanes   |           | ✓            | ✓   | ✓          | ✓                   |  |  |
| 7.        | Arterial Committed F |                      | (Note: ID numbers are same as ETP ID's   |           |              |   |            |                     |  |  |
|           | Bothell, Snohomish   |                      | 120th NE/39th SE - NE 95th to Maltby Rd - 4/5 lanes including new connection   | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |
|           | Bellevue             | R-08                 | NE 29th PI (148th Ave NE to NE 24th St)/Construct new 2-lane road  | ✓         | ✓            | ✓   | ✓          | ✓                   |  |  |

| l l     |                    |                               | Alternatives  |           |         |   |            |                     |
|---------|--------------------|-------------------------------|---|-----------|---------|---|------------|---------------------|
|         | Jurisdiction       | ACTIONS                       |   | 5         | 1       | 2   | 3          | 4                   |
| Element | #                  |                               |   | No Action | HCT/TDM | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |
|         | Snohomish Co.      | R-10                          | SR 524 (24 St SW to SR 527) Widen to 4/5 lanes including sidewalks, bike lanes  | ✓         | ✓       | √   | ✓          | ✓                   |
|         | Bothell            | R-13                          | Beardslee Blvd (Main St to I-405)Widen to 3 lanes+CGS (Project does not add capacity)   |           |         |   |            |                     |
|         | Joint              | R-17 & R-17(10)               | I-90/SR 900 Interchange and SR 900 improvements Interchange reconfiguration. Project is outside of the Study Area   |           |         |   |            |                     |
|         | Issaquah           | R-18                          | Issaquah bypass (Issaquah-Hobart Rd to I-90) Construct new 4/5 lanes with separated ped/bike trail. Project is outside of the Study Area.   |           |         |   |            |                     |
|         | Kirkland           | R-21                          | NE 120 St (Slater Ave to 124 Ave NE) Construct new 3-lane roadway with ped/bike facilities  | ✓         |         |   |            |                     |
|         | Redmond/<br>WSDOT  | R-25                          | SR 202 Corridor Improvements(East Lake Sammamish Pkwy to Sahalee Way) Widen to 3/5 lanes; intersection improvements with bike/ped facilities  | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | Redmond            | R-26                          | NE 90 St (Willows Rd to SR 202) Construct new 4/5 lanes + bike facilities   | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | Redmond            | R-28                          | West Lake Sammamish Parkway (Leary Way to Bel-Red Rd) Widen to 4/5 lanes + CGS, bike lanes  | <b>√</b>  | ✓       | ✓   | ✓          | ✓                   |
|         | Renton             | R-36                          | Oakesdale Ave SW (SW 31st to SW 16th) Construct new 5 lane roadway with CGS   | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | WSDOT              | R-38                          | SR 522 (SR 9 to SR 2) Widen to 4 lanes  |           |         |   |            |                     |
|         | KCDOT              | R-39 & R.AC-2                 | 140 Ave SE (SR 169 to SE 208 St) Widen to 5 lanes SR 169 to SE 196 St, widen for turn channels on SE 196. Combines 2 King County CIP projects. A major North-South arterial which serves the Soos Creek Plateau and Fairwood. | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | KCDOT              | R-40 & R.IC-24                | Juanita-Woodinville Way (NE 145 St to 112th Ave NE) Widen to 5 lanes + CGS, walkway/pathway   | ✓         | ✓       | ✓   | ✓          | <b>√</b>            |
|         | KCDOT              | R-41                          | East Lake Sammamish Pkwy (Issaquah-Fall City Rd to SE 56 St) Widen 4/5 lanes including bike facilities. Construct CGS; interconnect traffic signals. Project is outside of the Study Area.                                    |           |         |   |            |                     |
|         | Issaquah           | R-42                          | Sammamish Plateau Access Road (I-90 to IssPine Lake Rd) Prepare EIS, construct new 5-lane arterial w/ CGS, bike lanes. Project is outside of the Study Area.  |           |         |   |            |                     |
|         | Sammamish          | R-44                          | 228 Ave SE (SE 24th to NE 8 St) Widen to 4/5 lanes + CGS, bike lanes. Planned in 2 phases. Project is outside of the Study Area.  |           |         |   |            |                     |
|         | KCDOT              | R-45                          | Issaquan-Fall City Rd (Issaquah-Pine Lake Rd to Klahanie Dr) - Phase II & III Widen to 4/5 lanes + CGS, bike lanes.  Project is outside of the Study Area.  |           |         |   |            |                     |
|         | KCDOT              | R-47                          | NE 124 St (Willows Rd to SR 202) Widen to 4/5 lanes + CGS, bike facilities; traffic signal.   | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | KCDOT              | R-48                          | Avondale Rd (Tolt Pipeline to Woodinville-Duvall Rd) Widen to 3 lanes + walkway/pathway (Project does not add capacity)   |           |         |   |            |                     |
|         | Woodinville        | R-51                          | Woodinville-Snohomish Rd/140 Ave NE (NE 175 St to SR 522) Widen to 4/5 lanes + CGS, bike lanes  | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | KCDOT              | R-52                          | Woodinville-Duvall Rd (NE 171st St to Avondale Rd) Widen to 5 lanes + shoulders (without widening towards Woodinville the added capacity can't be used)   |           |         |   |            |                     |
|         | Bellevue           | R-101                         | 150th Ave SEWiden to 7 lanes from SE 36th to SE 38th; add turn lanes  | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | Redmond            | R-111 & R.AC-15               | Willows Rd Corridor Improvements Channelization of Willows Rd/Redmond Way intersection and widening of Willows Rd from NE 116th to NE 124th   | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         | Snohomish Co.      | R-117                         | 39th Ave SE Realignment at SR 524 and York Rd Construct 4-way intersection to replace 2 offset intersections  | ✓         | ✓       | ✓   | ✓          | ✓                   |
|         |                    |                               |   | -         |         |   |            | <del></del>         |
| 17. Pl  | anned Arterial Pro | ects                          |   | ·         |         |   |            |                     |
|         | Sound Transit      | R.PA-1, HOV-102 &<br>R.HOV-58 | SR 522 (Woodinville to Bothell) HOV enhancements (ETP 246) See HOV-102  |           |         |   |            |                     |
|         | Bellevue           | R.PA-2                        | 148 Ave SE (SE 24 St to SE 28 St) New SB lane from SE 24 St to the WB I-90 on-ramp (ETP 203)  |           |         | ✓   | ✓          | 1                   |
|         | Bothell            | R.PA-3                        | SR 522 Multimodal Corridor Project Widen SR-522 mostly within existing ROW to provide transit lanes, safety improvements, consolidated driveways & left turn lanes; and sidewalks. (ETP R-107)                                |           |         | ✓   | ✓          | ✓                   |
|         | Bothell            | R.PA-4                        | SR 524 (SR 527 to Bothell City Limit) Widen to 5 lanes + CGS, bike facilities (class III) (ETP R-11)  |           |         | ✓   | ✓          | ✓                   |
|         | KCDOT              | R.PA-5                        | SE 212 Way/SE 208 St (SR 167 to Benson Rd/SR 515) Widen to 6 lanes + bike facilities, Transit/HOV preferential treatment, turn channels. (ETP R-46)   |           |         | ✓   | ✓          | ✓                   |
|         | KCDOT              | R.PA-6                        | Petrovitsky Rd (143 Ave SE to 151 Ave SE) Widen to 5 lanes + CGS, bike lanes, traffic signal, interconnect (ETP 265). Project has already been constructed.   |           |         |   |            |                     |
|         | KCDOT              | R.PA-7                        | Bear Creek Arterial (NE 80 St to Novelty Hill Rd) Corridor study and construction of new 3 lane arterial (ETP 141).  Project is outside the study area  |           |         |   |            |                     |
|         | KCDOT              | R.PA-8                        | NE 124/128 St (SR 202 to Avondale Rd) Widen to 4/5 lanes including bike & equestrian facilities (ETP 164)   |           |         | ✓   | 1          | ✓                   |
|         | KCDOT              | R.PA-9                        | SE 208 St (116 Ave SE to 132 Ave SE) Widen to 4/5 lanes + CGS, bike lanes, traffic signal (ETP 263). Project has  |           |         |   | -          | •                   |

|        |               |                    |  | Alternatives |   |            |                     |          |
|--------|---------------|--------------------|--|--------------|---|------------|---------------------|----------|
|        | Jurisdiction  | ACTIONS            |  | 5            | 1   | 2          | 3                   | 4        |
| Elemer | nent#         |                    | No Action  | HCT/TDM      | Mixed Mode<br>with<br>HCT/Transit<br>Emphasis | Mixed Mode | General<br>Capacity |          |
|        | KCDOT         | R.PA-10            | NE 132 St Extension (132 Ave NE to Willows Rd Ext.) Construct new 3 Iane arterial with CGS, bike Ianes (ETP 61)                          |              |   | ✓          | ✓                   | ✓        |
|        | Kenmore/KCDOT | R.PA-11 & R.HOV-53 | 68 Ave NE (Simonds Rd to SR 522) Construct NB HOV lane total of 5/6 lanes (ETP 22)   |              |   | <b>√</b> * | <b>√</b> *          | ✓        |
|        | Kirkland      | R.PA-12            | 124 Ave NE (NE 85 St to Slater Rd NE) Widen to 3 lanes (s. of NE 116th St, 5 lanes n. of NE 116th St with ped/bike facilities (ETP R-23) |              |   | ✓          | ✓                   | ✓        |
|        | Kirkland      | R.PA-13 & R.IC-26  | NE 132 St (100 Ave NE to 116 Way NE) Widen to 3 lanes + CGS, Bike lane (ETP R-124)   |              |   | ✓          | ✓                   | ✓        |
|        | Kirkland      | R.PA-14            | NE 100 St (117 Ave NE to Slater Ave) Construct bike/pedestrian/emergency Vehicle overpass across I-405 (ETP 309)                         |              |   | ✓          | ✓                   | <b>√</b> |
|        | Newcastle     | R.PA-15            | Coal Creek Pkwy (SE 72 St to Renton City Limits) Widen to 4/5 lanes + CGS, bike lanes, traffic signals (ETP R-24)                        |              |   | ✓          | ✓                   | ✓        |
|        | Redmond       | R.PA-16            | Redmond 148th Ave NE Corridor - 3 projects Turn lane and channelization improvements along corridor – BROTS;                             |              |   | ✓          | ✓                   | ✓        |
|        | Redmond       | R.PA-17            | Bear Creek Pkwy Construct new 162nd Ave NE arterial and new 72nd St arterial w/ bike/ped and CSG; widen Bear Creek Pkwy (ETP R-110)      |              |   | ✓          | ✓                   | ✓        |
|        | Redmond       | R.PA-18            | Union Hill Rd (Avondale Rd to 196 Ave NE) Widen to 4/5 lanes with bike facilities (ETP R-27)   |              |   | ✓          | ✓                   | ✓        |
|        | Renton        | R.PA-19            | Duvall Ave NE (NE 4 St to NE 25 Court -City Limits) Widen to 5 lanes + CGS, bikeway (ETP R-31)   |              |   | ✓          | ✓                   | ✓        |
|        | Renton        | R.PA-20            | Oakesdale Ave SW (Monster Rd to SR 900) Replace Monster Rd Bridge; widen to 4/5 lanes +Bike Lanes + CGS (ETP R-35)                       |              |   | ✓          | ✓                   | ✓        |
|        | Renton        | R.PA-21            | Rainier Ave / Grady Way (intersection) Grade separation  |              |   | ✓          | ✓                   | ✓        |
|        | Renton        | R.PA-22            | SW Grady Way (SR 167 to SR 515) Rechannelize and modify signals for a continuous eastbound lane (ETP R-37)                               |              |   | ✓          | ✓                   | ✓        |
|        | Renton        | R.PA-23            | SR 167 at East Valley Road New southbound off-ramp and signalization at East Valley Road (ETP 255)                                       |              |   | ✓          | ✓                   | ✓        |
|        | Renton/ KCDOT | R.PA-24            | Soos Creek Regional Links Placeholder for Trans-Valley Study (ETP R-115)   |              |   | ✓          | ✓                   | ✓        |
|        | Woodinville   | R.PA-25 & R.AC-30  | SR 522 Interchange Package(SR 522/SR 202 &SR522/195th St) Access improvements and new freeway ramps (ETP R-53) (See R.AC-30)             |              |   | ✓          | ✓                   | <b>√</b> |
|        | Woodinville   | R.PA-26            | SR202 Corridor Package (SR202/148th Ave & SR202/127th Place) Intersection improvements (ETP R-54)  |              |   | ✓          | ✓                   | ✓        |
|        | WSDOT         | R.PA-27            | SR 520/SR 202 Interchange Complete interchange by constructing a new ramp and thru lane on 202 to SR 520 (ETP R-29)                      |              |   | ✓          | ✓                   | <b>√</b> |
|        | WSDOT         | R.PA-28 & R.AC-17  | SR 202 / 140 Place NE (NE 124 St to NE 175 St) Widen 4/5 lanes (ETP R-43) (See R.AC-17, 18)  |              |   | ✓          | ✓                   | ✓        |
|        | WSDOT         | R.PA-29            | SR 202 (Sahalee Way to Bear Creek-Sammamish Arterial) Widen to 4/5 lanes (ETP 152). Project is outside the Study Area.                   |              |   |            |                     |          |
|        |               |                    |  |              |   |            |                     |          |

## **APPENDIX C**Communications and Coordination



## APPENDIX D

Individual Jurisdiction's Shoreline Designation Maps